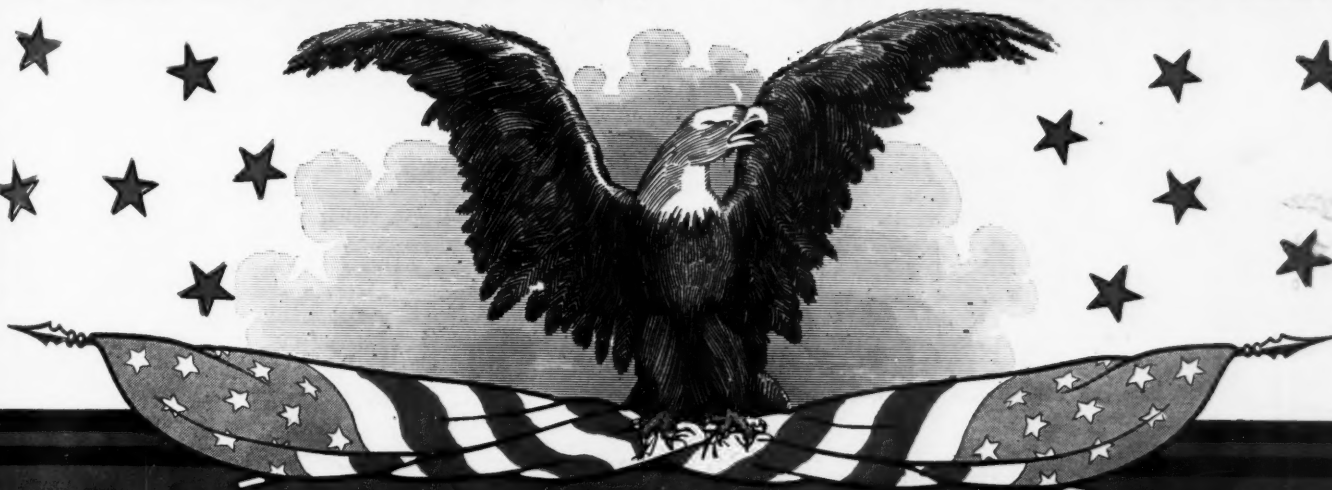


DECEMBER 1916

Dec 13 '16 ET

AMERICAN CARPENTER AND BUILDER



THE WORLD'S GREATEST BUILDING PAPER

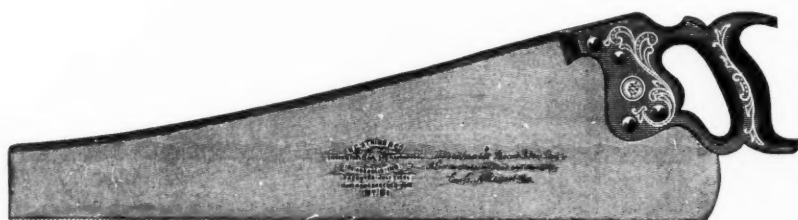
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Indianapolis - Indiana

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER



A Christmas Greeting from the Editor

HERE we are again right up to that happy time for wishing Our Folks a Merry Christmas. The newspapers remind us every morning that there are only 25 days left, then 24, then 23, etc., and to "Do Your Shopping Early," so we can't escape the fact that the merry gift season is again upon us.

We do wish our subscribers and other friends the very merriest, cheeriest of Christmases. We hope each one of you may have someone you can make happy with some small gift, for certainly at Christmas time, perhaps more than at any other, it is more blessed to give than to receive.

Give What Helps

The Editor has two little boys of his own, and he knows that the toys that cost the most are not the ones that are loved best. Children like to make things and do things for themselves. Most children are crazy about tools, especially if Daddy is a carpenter and builder; and could anything be more suitable for Christmas than a small workbench and chest of little tools?

And speaking of tools as Christmas gifts, we wouldn't limit them to the small boys, either; their big brothers and fathers, if in the building business, or if a home tinkerer or handy man, would rather have a new saw, improved plane, set of chisels, ratchet drill set, or framing square than all the pretty knick knacks at Woolworth's.

Building Magazines and Books for Builders

We are in the building business, so maybe we don't see things exactly in the right proportions, but to us building seems the biggest, most important and most interesting subject in the world. It seems to us that almost *everyone* is interested in modern house plans and in the latest ideas for that new home which everyone seems to be planning. If this is so, wouldn't an attractive book of home designs and farm building ideas be an ideal, inexpensive present for a great many of your friends and neighbors? And among the carpenters and builders themselves, what could be more suitable or appreciated as a Christmas remembrance than a subscription to the AMERICAN CARPENTER AND BUILDER?

Season of Good Fellowship

At this Christmas season we feel that the many expressions of good fellowship and mutual business interests between builders and their building material dealers, presented in this issue of our magazine, are especially timely. This December AMERICAN CARPENTER AND BUILDER has been referred to as our "Contractor-Dealer Goodwill Number." We know that this goodwill is an actual fact in most communities and we trust that this spirit of good fellowship will go forward until *everyone* concerned with building will be working together in close harmony in *every* community.

Again we wish you all a Merry and Kindly Christmas.

Editor AMERICAN CARPENTER AND BUILDER.

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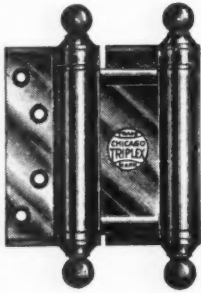
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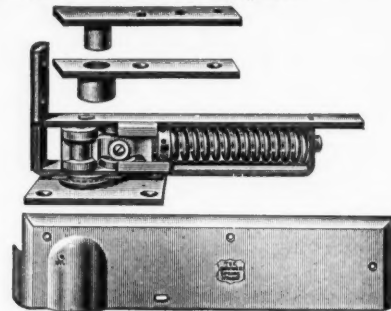


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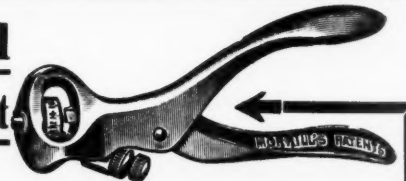
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The
**World's Greatest
Building Paper**

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American Carpenter and Builder

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PROTECTION FOR OUR READERS

The publishers of the American Carpenter and Builder will not knowingly accept advertising from any individual, firm or corporation that is misleading in any way. They also reserve the right to edit advertising copy and to change or eliminate any statements that reflect or cast discredit upon any other building products.

The American Carpenter and Builder Company will use every legitimate means to safeguard the interests of its readers and its advertisers. It will use every effort to protect them from concerns whose business methods are open to question. Where the slightest doubt exists write the publishers for complete information. It may save money, time and worry.

In all cases in writing to advertisers inquirers should say, "I saw your advertisement in the American Carpenter and Builder."

VOL. XXII

December, 1916

No. 3

Why Grave Yard Repentance?

A FRIENDLY WORD TO ALL CONCERNED WITH BUILDING IMPROVEMENTS—BUILDERS, SUB-CONTRACTORS, BUILDING MECHANICS, LUMBER AND BUILDING MATERIAL DEALERS, HARDWARE DEALERS AND ARCHITECTS

SOME people think that the only subject discussed by the publishers of a magazine is "how to get the money." That may be so with some, but the wise publisher takes a deep interest in the welfare of the people he serves.

Nor is he lacking in self-interest in doing so. The success of his publication depends on the prosperity of his readers.

This may be the reason of this series of articles.

An analysis of our subscription list shows that the AMERICAN CARPENTER AND BUILDER goes each month into the hands of a very large number of men who put *braven as well as brain* into buildings. (We believe they are the leaders; otherwise they would not give their money and time to our pages.)

The next class of our readers are those who give *brains and business ability* in constructive work, viz.,

the architects, contractors and builders. These are numbered by the thousands.

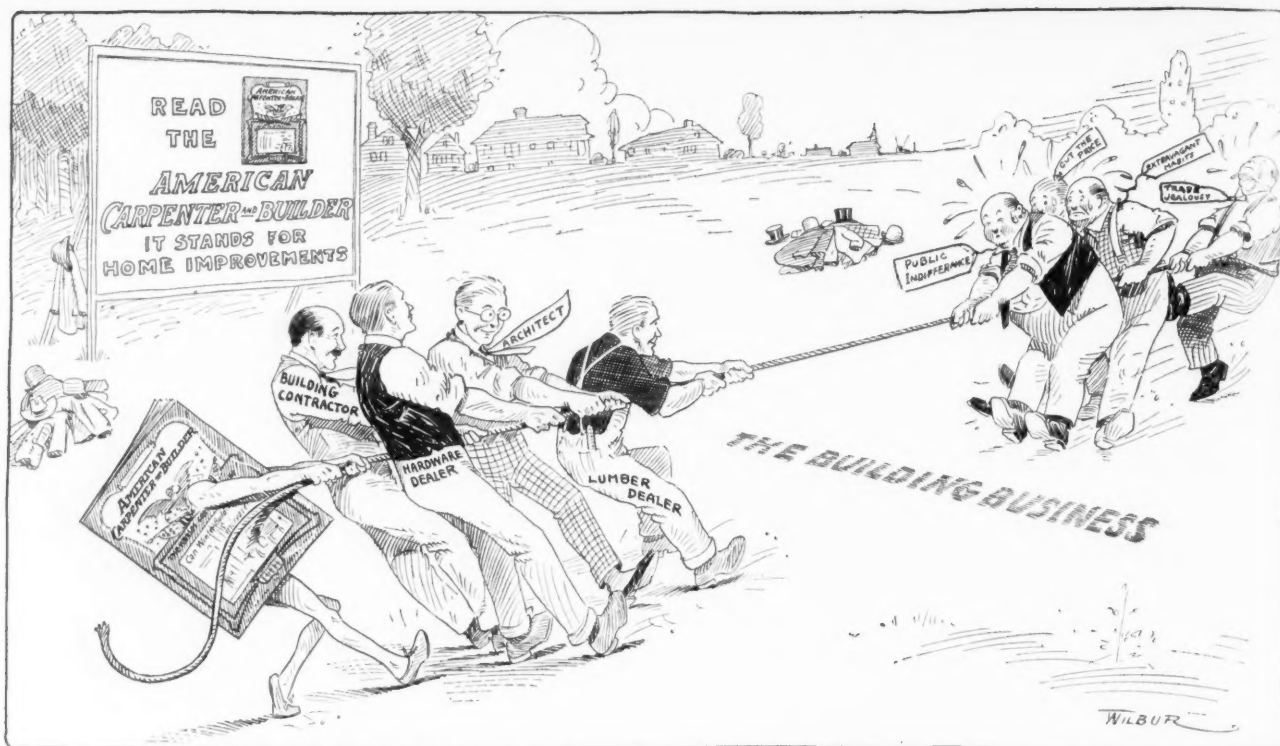
While the third class, i. e., *dealers in building materials*, does not show up so strongly on our subscription books as compared with the others, yet they are not only increasing in number very rapidly, but they are essential to the health and growth of building.

We read in the Good Book that we can serve only one master. The AMERICAN CARPENTER AND BUILDER serves only one master, i. e., the general building field.

These are really three brothers in the building field, the architect and builder, the building mechanic, and the supply man. And, like brothers, they often fight in a most desperate way.

A number of years ago the writer knew a family of four boys.

The father had settled in our section when land was



All Interests Concerned With Building Should Pull Together in Every Community. Building Improvements Can be Agitated, Renters Can be Made Into Home Builders and Part of the Extravagant Money Being Spent for Joy Rides and High Living Can be Turned Aside Into the Building of Homes and Other Profitable Building Investments. United Publicity Effort Can Win Over These Two Great Hindrances to Building on the Part of the General Public, Namely: "Extravagant Habits" and "Indifference to Housing Needs." Then Within the Building Fraternity Itself, Let's Get Together and Put the Skids Under "Trade Jealousy" and Old Man "Cut-the-Price."

cheap. When old age came on he split the farm into four pieces and built three houses near his house which he turned over to the oldest son. The other three houses and three farms were given to the three younger men. It was an ideal arrangement. He thought they would be able to co-operate thru the joint use of expensive machinery, the interchange of help, etc. But it didn't work. *Old Nick came in and stirred up jealousy and selfishness. Some people said their wives were the cause of the trouble, but others laid it to the Devil.*

At all events, there was always a turmoil and no other four families in the county had as much trouble among themselves as they did. Several times they came to blows. The ruction seemed to get worse until one of the brothers was suddenly killed. That funeral will never be forgotten, nor the scene as the three remaining brothers wept in sorrow and washed out the old bitterness with salty tears beside the grave.

But why was it necessary to wait for this graveyard repentance?

In a recent conference of the editorial staff of the AMERICAN CARPENTER AND BUILDER we discussed the unfortunate lack of unified work among the three branches of the building industry.

There were many opinions as to the cause and remedy.

We were a unit in our belief that BUILDING INTERESTS would benefit if there could be a getting together of all interested, if for no other reason than that building interests suffer from the bitterness that often develops in business strife.

We came to the conclusion that we were hardly qualified to go alone into this subject.

Before we began a thoro canvass of the situation we wanted to know if there was a feeling of need on the part of those most vitally interested. With this end in view, we addressed a few dealers in building materials—hardware, lumber, etc.—and contractors. From the tone of the responses we have received we are encouraged to make an extensive investigation and with the help of our readers secure a workable plan.

Note parts of letters we have received.

Then let us have your idea as seen thru eyes from your standpoint.

Because of what he says and because he is President of the National Retail Hardware Association, we think that the letter of C. T. Woodward, Carlinville, Ill., is of special interest. He appreciates the difficulties as well as the needs, saying:

"In reply to your letter of October 19th, I can see no reason why the co-operation of the Hardware Dealer, Lumberman, and Builder for their mutual good, and good of the community, would not be very desirable. I am of the opinion that it will be rather difficult to work this problem out satisfactorily in a great many cases. At the same time it is a much desired condition."

He points out the ideal situation:

"I am very glad to say that the condition here in Carlinville is very satisfactory, and we all work together very nicely, and there is really no reason why this should not be accomplished in every city if each

party interested is willing to give and take, or better still, if they will confine their business to their own particular lines."

From across the way we have a semi-official utterance from J. P. Bartelle, Secy-Treas. of the Union Association of Lumber and Sash and Door Salesmen.

"I am in full sympathy with the mark you have in view and believe you will accomplish much good in bringing the retail dealer and the carpenter contractor in closer harmony."

He emphasizes the fraternal spirit.

"They should work together for the benefit of all. Their co-operation would result in better service all around. Wishing you success in the good work you have undertaken."

Several of our friends in the lumber business write to encourage our work.

Each one will be especially interested in the comments of Mr. L. C. Abbott of Marshalltown, Ia. Not only did Mr. Abbott serve a term as President of the National Hardware Association, but he has been a faithful worker in its councils both National and State. But beyond all that he is a successful merchant of broad experience. After touching on some of the weak spots in the equipment of the retail hardware dealer, he writes:

"If this were not the case, the mail order houses could never make the inroads they have in their local territory. Goods must be presented to the customer at the right price and with full knowledge of their quality and application. A successful hardware merchant is one who can, with knowledge of values and requirements, figure intelligently on a set of plans, co-operate with his local lumber dealer and get the business with a profit."

He states some pertinent truths:

"Ten percent differential between the Chicago price and your local price is easily procured, but 25 to 33 1/3% is a barrier too stubborn to surmount, and the only solution is to find out where you as a dealer are lame. Goods can be bought to meet this competition. But this way to the price must be cleared of all embarrassments like past due bills, lax business methods and ignorance of requirements."

We feel that his statement which follows is correct, but believe that such a percentage of inefficiency on the part of hardware dealers comes about because of a number of their departments such as house furnishings, sporting goods, cutlery, etc., do not require the training that is required on the part of the lumberman.

"The lumber dealers as a whole are keener merchants than the Hardware man. Why? Their organization is more efficient, their co-operation is more concentrated and as a body they respond to demands for business efficiency. Most of them are capable of figuring out a house or barn bill for the information of the customer, and then follow up with

price, service, and salesmanship to close the deal. The lumber dealer will carry nails and builders hardware if the hardware man does not co-operate."

To the following, we say Amen:

"The local Commercial Club is the best method to procure harmony, acquaintance and co-operation. You cannot get acquainted thru business methods only, with other merchants in your town. If the town is not large enough for a Commercial Club, start a "Hot Air" club at the corner drug store. Have a few picnics, fishing excursions, country dance, lodge or anything, but get under that Business Face, and get at his personality. You will find him a fine fellow and one willing to meet you and co-operate on these 'Trade Problems'

"Local strife is poison to any community and the smaller the town the more likely its appearance. Jealously because your contemporary in business is alive, put in a new store front, sold your neighbor a lawn mower, advertises in the town paper, Master of the Lodge, member of the City Council, advocate of good roads, is only the first indication of the disease known as 'Dry Rot.' And the quicker you dispose of your nails, tin pans and fish hooks the better the salvage. You cannot succeed by watching his movements. Get acquainted with him and move likewise. There is room for both and two first class hardware stores in your town will increase the business by making it a center of hardware activity."

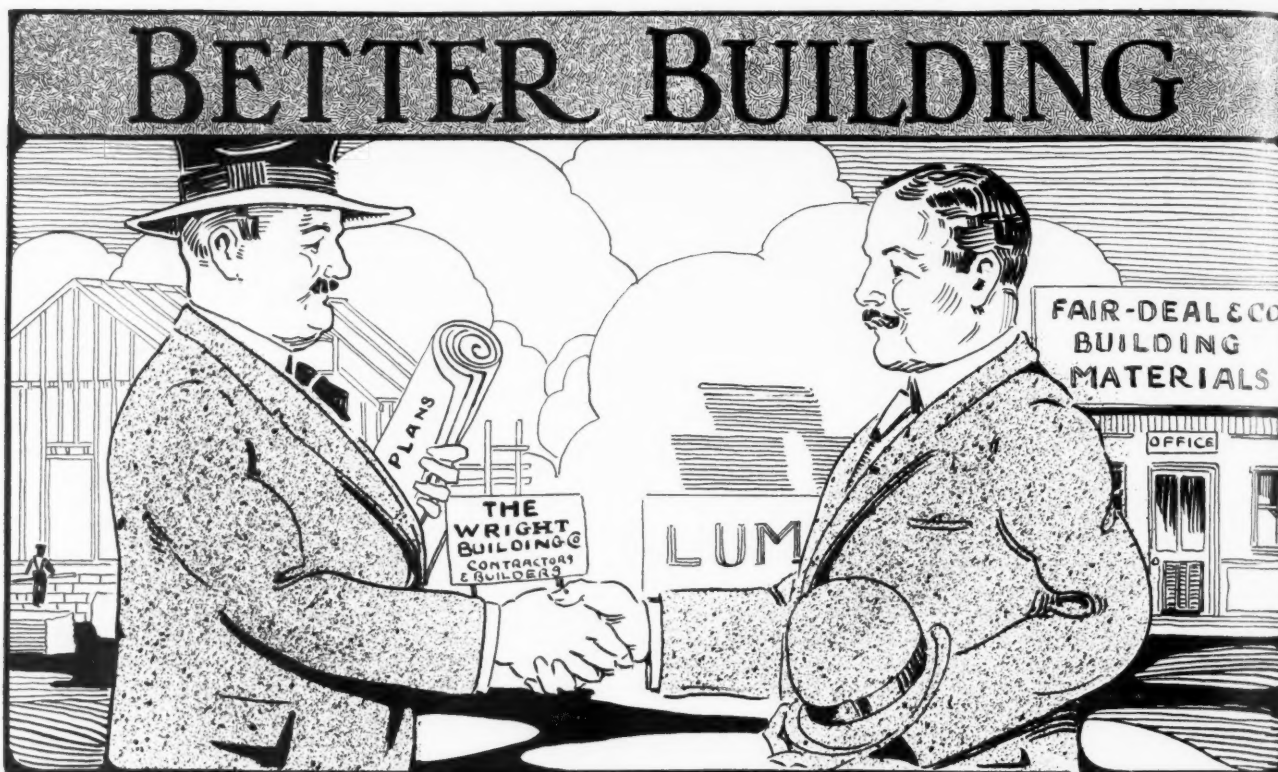
We are saving some admirable material from this letter for a future issue, but must give the finish of his letter:

"Co-operate wherever possible. The mason brick layer, lumberman, carpenter, plumber, and tinner are factors in construction work as well as the hardware merchant. Five to seven percent is about your limit when it comes to hardware. You never will get this percent of business if you don't know this 'Bunch'."

Why can't every dealer in building material in every community take up the spirit of the men above quoted and unite with the other men of that community who are interested in building, viz., the architects, the contractors, tinsmiths, carpenters, etc., for the good of all, which will mean the benefit of each.

Is this too Utopian to expect in the twentieth century? Must the building interests follow Europe's example of settling differences?

The prosperity of the AMERICAN CARPENTER AND BUILDER depends on the prosperity of the Building Industry. That is one reason of our interest. The paramount interest we have is because of the thousands for whom we have a brotherly feeling and we do not want to be present at another grave yard scene as described at the start of this article. We want a free, full, frank discussion of this subject on the part of all. Names will not be published. We want to lay the foundation for fraternal results among those who have to do with home building.



Dealer-Contractor Good-Will Best for Building

The Building Trio for Best Success

HOW THE CONTRACTOR, THE DEALER AND THE MANUFACTURER CAN CO-OPERATE

By **L. M. Francisco**

Service Bureau, The Curtis Companies

PARTICULARLY in the building industry is co-operation required. It takes many minds and many hands to convert trees, stones or metals into the completed structure of a house. The three greatest subdivisions of the function of these many minds group themselves into the work of the contractor, the dealer and the manufacturer of building materials. It is important that these three factors co-operate to the greatest extent for the greatest efficiency in building.

One—The Contractor

The contractor might be called the first element in the building process because he is the first one to whom the home builder goes for help in the construction of his house. He is the one who actually builds the house and has immediate charge of the work on it, shaping it to the ideals of the owner. The contractor is the authority on all questions of construction as regards the uses of materials and the cost of erection. He is the authority on directing the labor that is necessary to make a completed product out of unassembled materials.

Two—The Building Material Dealer

The dealer is the man who knows best the qualities of materials and their costs. In this capacity, his work closely dovetails with that of the contractor and for that reason the dealer and contractor should co-

operate. The dealer might well be likened to a clearing house of information on building materials, because he is the man to whom the manufacturer of those materials directs all his efforts; and he is the man to whom the contractor comes for advice on materials. On the other hand, he, by transmitting the information he learns from the requirements of the contractor, enables the manufacturer to produce materials of wider usefulness. Then, too, he can often relieve the contractor of many details in connection with supplying materials for houses in construction. After the house is well under way, the contractor should be able to depend upon his dealer to take care of such details as deliveries of different materials when needed and keeping him informed in regard to the market conditions.

Three—The Manufacturer

The manufacturer needs also to be in constant touch with the dealer. He needs to study the dealers' problems and often give advice that the dealer could not obtain thru his own efforts. It behooves every manufacturer of building materials to study those problems of his dealers and their contractors not only with the view of helping the dealers, but because by doing so he will build a large business for himself.

It is by the service that the manufacturer can render in distributing his goods that he can distinguish him-

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self, and make himself useful to the other two members of the building trio. This service consists in complete co-operation with them to the end that the home builder gets the best home at the best price. That does not mean that he gets the best home at the lowest price, for price is only a relative term. "All works of quality must bear a price in proportion to the time, skill, expense and risk attending their manufacture. Those things called 'dear' are when justly estimated, the cheapest. A composition for cheapness and not excellence of workmanship is the most frequent and certain cause of the rapid decay and entire destruction of arts and manufactures."

How It Worked Out in One Town

The foregoing has to do with an abstract explanations of the building trio and the ways in which they can co-operate with each other. A typical example of how the practical application of the principles mentioned proves effective is presented in one little Indiana town. The lumber dealer in this town has established his office as headquarters for all the contractors with whom he does business. They come to him for information and advice on every question that has to do with the building of better homes. He has a modest library composed of up-to-date books on building materials and catalogs of all his manufacturers. In order that he can talk to the contractors and that they can talk to homebuilders in terms of houses rather than materials, this dealer has plan books that show pictures of a great many houses, and on a short notice he is able to procure the plan for any house. The contractors recognize the value of his co-operation with

them, and, on the other hand, manufacturers appreciate his co-operation with them. In general the trio is enabled to produce for the home owner in that town what he wants and what he should have at a price that it is worth.

This dealer was a pioneer in recognizing the value of trade-marked goods in better merchandising and in establishing co-operation between members of the building trio. It took him a long time to convince his contractors of the need for trade-marked building materials, but by the help of the advertising of the manufacturers of these materials, he was able to sell two complete house jobs, using trade-marked goods. The homebuilders recognized the value in knowing the character of goods that went into their houses and thru the excellent service that the dealer and contractors gave them, they became satisfied customers. It wasn't long until there were more houses built, using trade-marked goods. The free advertising that those satisfied customers have given the contractor, dealer and goods have made it so easy to sell the trade-marked article. With the trade-mark, the dealer is able to refute price arguments, and for the same reason the contractor is able to make a just profit on every home he builds.

The remarkable success which the dealer and contractors in this little Indiana town have enjoyed, and the fact that they are only representative of a great many other dealers and contractors enjoying similar relations, is a strong indorsement for complete co-operation between every member of the building trio—contractor, dealer and manufacturer.



THE MOTOR TRUCK STANDS FOR QUICK SERVICE IN THE BUILDING FIELD.

The Building Material Dealer Who Delivers by Motor Truck Gets the Preference. Builders Relish Prompt Service. The Hawkeye Lumber & Coal Company of Cedar Rapids, Iowa, is Here Delivering Window Frames Close to the Building Site for Contractor Peterson. "Zep," as They Have Labeled This Truck, Will Sail Most Anywhere a Derrigible Will Go. It Saves on Haulage Costs, and Is the Best Ad the Hawkeye People Ever Ran.

Dealers and Contractors Need Good House Plan Service to Compete Successfully with Catalog Firms

By W. B. Wood

Sec. Northwest Missouri Retail Lumber Dealers' Association

FROM time immemorial it has been customary for the lumber yard office to be the center and circumference of everything appertaining to the building and improving of the community. This has been nothing more than a natural condition. The retail lumber dealer is constantly in touch with all improving being done and as a result should have better ideas on planning and arranging a home.

When our old friend and neighbor—and we were friends and neighbors of every one for miles and miles around—would want some building done, he came to the lumber yard and told us what he wanted, and we would call in the local carpenter or contractor. Together we would figure out the bill and give him the very best price possible and he was satisfied. This was the natural and logical condition.

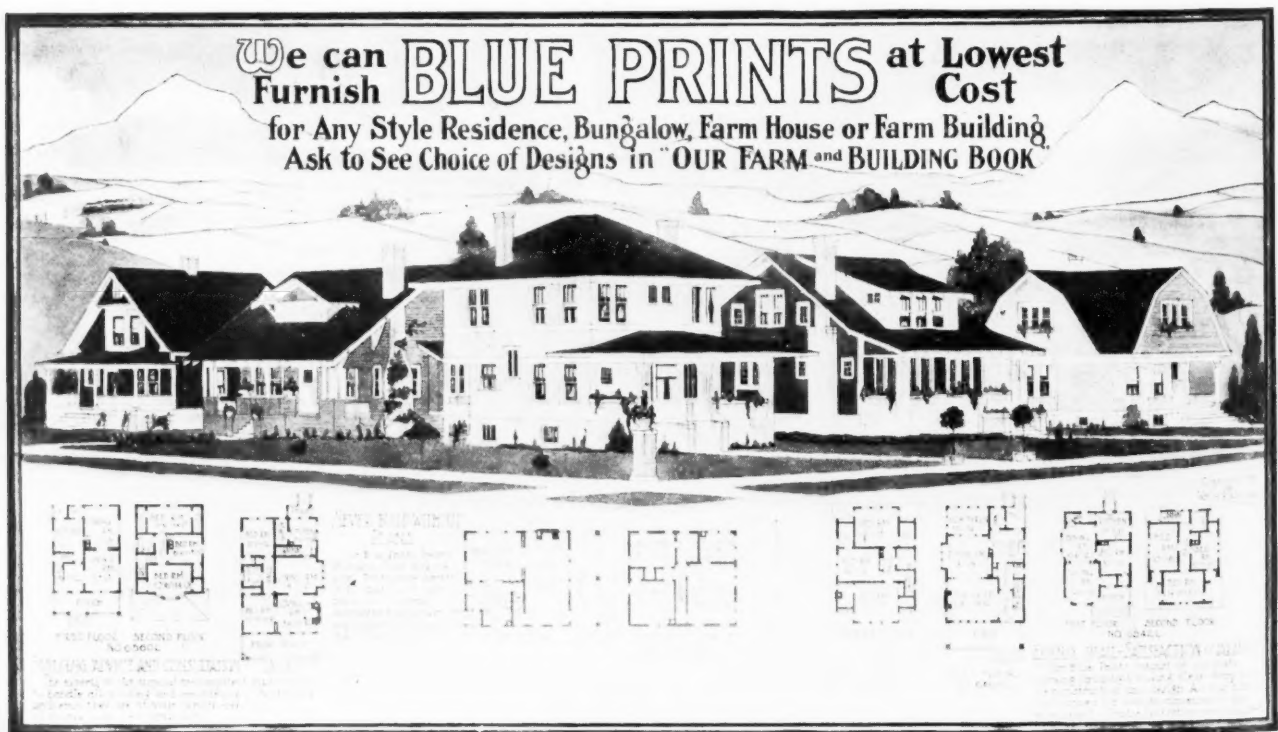
All things being equal, man in his wayfaring thru life will travel in the line of least resistance. This was the condition as prevailed from the time of the early retailer until recent years, when outside influences began creating dissensions between the dealer and the consumer and carpenter. From outside sources came glaring advertisements informing the satisfied consumer that he was being robbed.

From that time it became necessary for the local

dealer to use different methods to hold his trade and regain that which he had lost. His old friend was traveling in the line of least resistance. By similar methods some carpenters were alienated from the local dealer. This was largely accomplished thru the sending out of house design pictures and complete sets of house plans, whereby house building was made easier. This was a weakness of the dealer which was taken advantage of, but which has been largely overcome thru the installation of the modern plan system.

Every lumber dealer should have complete and up-to-date plans in his office, and at this stage of the game he cannot hope to compete and claim his share of the business unless he is as well or better equipped with a plan system than his competitor.

By being equipped to assist the carpenter, contractor and builder with new ideas, to help them plan their work and their homes, to make them feel their interests are one with those of the building material dealer, in fact not only to be prepared to give but to render actual service; this, I believe, and this alone will enable the retail lumber dealer of today to take the place in the community that he held yesterday. It will enable him to render a still bigger service to the community, to place him in a position of authority and



The Walls of a Lumber Dealer's Office Are Worth Money to Him and to the Entire Building Industry. They Should be Used to Display Posters that Will Talk His Building Business and Encourage Building Improvements. Above is Reproduced the Photograph of a Very Attractive, Hand-Colored Blueprint Poster, 23 by 40 Inches in Size, Which Now Adorns the Walls of More than Ten Thousand Lumber Yard Offices. Dealers Who Are Prepared to Furnish Building Plan Service Display this Poster. It Brings the Man Who Thinks of Building and His Wife to the Lumber Office and Helps Them Decide.

Putting Confidence Into Building Business by Guranteeing Materials of Standard Quality

By R. S. Kellogg

Secretary, National Lumber Manufacturers Association

THE extent to which all of us depend upon trade-marks in buying our ordinary necessities is scarcely realized until we stop to take account. Then we are likely to find that we buy shoes, socks, collars, hats, clothes and an endless number of articles of food simply by trade-mark or brand. We have learned through experience that a certain article fits our means or pocketbooks and our own personal peculiarities of taste. Then if the article is trade-marked, or carries some well advertised, easily remembered name, we order it by brand forever afterward without stopping to investigate further as to quality. The trade-mark becomes to us a guarantee of quality, and if occasionally we get an article bearing a long used and familiar trade-mark that does not come up to standard we are sorely disappointed.

Should this disappointment continue thru two or three subsequent purchases, we make a new choice on a similar article bearing another brand, and the trade-mark which we formerly depended upon for satisfaction then becomes a sign of warning for the avoidance of future purchases.

It is this marking of individuality that forces the maker of trade-marked goods to put out a uniform standard of quality. If he does not, his trade immediately goes to pieces.

It has taken longer for the manufacturers and users of building materials to come to the recognition of the merits and conveniences of trade-marking than it has required for most other lines. Cement is now sold under well-known trade brands, as are composition roofings and many varieties of brick and other building supplies. Until recently, however, lumber has been just lumber, and shingles nothing but shingles, without pride of manufacture or hope for a lasting reputation. They were anonymous goods, and had no characteristics which would enable the user to identify them and secure the same material for the next job.

Branding Lumber Products

When the producers of lumber and shingles recognized that the fundamental principles of merchandising apply as well to these articles as to all other commodities, a better day began for manufacturers, retailers, contractors and builders. The man who wants a certain kind of lumber or brand of shingles today can get them trade-marked with the stamp of either the individual manufacturer or of the trade association to which the manufacturer belongs, and he can order tomorrow and next week and

next year by the same trade-mark and get the same service.

The lead in the adoption of an association trade-mark, to be used by all its members whose product comes up to the required standards, was taken by the Southern Cypress Manufacturers Association, whose trade-mark will soon be advertised throughout the United States. This mark will be stamped in the end of every cypress board, and in addition to the association brand, will carry a number which will enable the user anywhere, if he so desires, to trace the board back to the original mill in which it was sawed. This means honesty and responsibility in lumber manufacture and merchandising.

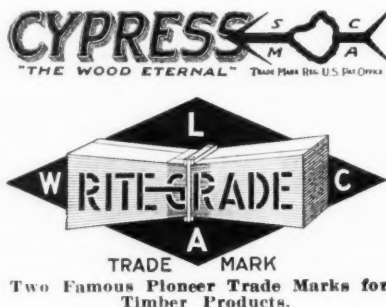
Another example along this line is that of the "Rite-Grade" shingles, put out by the Western Red Cedar Shingle Manufacturers, who, by complying with rigid standards of manufacture and grading, have obtained the right to use an Association trade-mark upon their product.

Associations of lumber manufacturers elsewhere in the United States are giving very serious consideration to practical means of branding their products, and in addition to this, a number of very large and responsible firms are individually branding or stamping their lumber and stand ready to guarantee its fitness for the purposes intended.

Retailers Indorse Lumber Branding

When the branding of lumber was first suggested, many said that it would be opposed by retail lumber dealers, who did not wish to handle trade-marked lumber, but that they would prefer to buy all kinds and grades of stocks as best suited themselves, or in such fashion as might be most profitable to them in view of the general ignorance of the consumer as to grading rules. This charge against the retail lumber dealer is best answered by the statement that he has been quick to recognize that his greatest interest lies in promoting and selling standard goods, just as does the grocer or hardware man. Most significant of all was the following resolution adopted by the National Retail Lumber Dealers Assn. last September:

"This association heartily endorses and will support the efforts of all associations of lumber manufacturers which are devising ways and means for the branding of the product of their members and thereby assuring, within a reasonable variation, the integrity of the grade, as well as making possible the identification of the stock, with consequent protection to the retail dealers and the consuming public."



Why We Brand Our Lumber

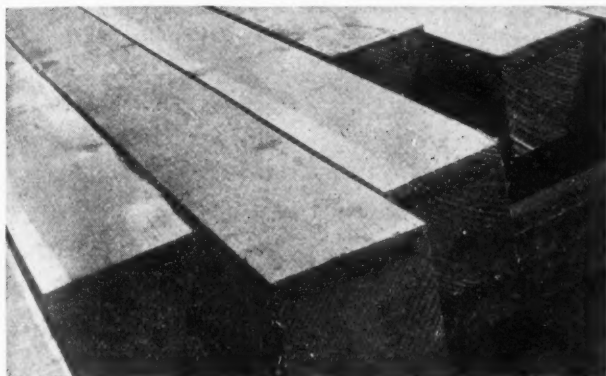
By G. A. Townsend

Sales Manager, Great Southern Lumber Co.

THE trade-marking of lumber marks an important and, we might say vital era not only in the merchandising of lumber, but also in its manufacture, for when lumber is branded with a trade-mark it cannot lose the identity of its source of origin and consequently it is of imperative importance for each and every man connected with its manufacture to see that each and every piece is given the proper workmanship, the proper grading and the proper care in shipping. These facts have already been demonstrated by a large manufacturer of Southern pine at Bogalusa, Louisiana, who have been trade-marking their commodity for a considerable time.

The advantages of trade-marked lumber to the manufacturer of this commodity are numerous, but to the building contractors and to the lumber dealers the advantages are more far-reaching, more vital and of a greater necessity.

As the question under consideration has so many



Notice the Word "Bogalusa" Stamped on the Ends of these Long Leaf Yellow Pine Timbers. This Identifies the Material, No Matter Where it is, and Recalls the Manufacturer's Guarantee.

ramifications and covers such a wide scope, let us confine ourselves strictly to the relationship of trade-marked lumber to the building contractors and the lumber dealers.

The Encyclopedia Britannica defines a trademark as: "A symbol applied to the goods of a trader for the purpose of distinguishing them from similar goods of other traders and of identifying them as HIS goods in the business in which they are produced or put forward for sale." The trade-mark means that the manufacturer who uses it is willing to go before the world and say: "I made this article and have put my name on it."

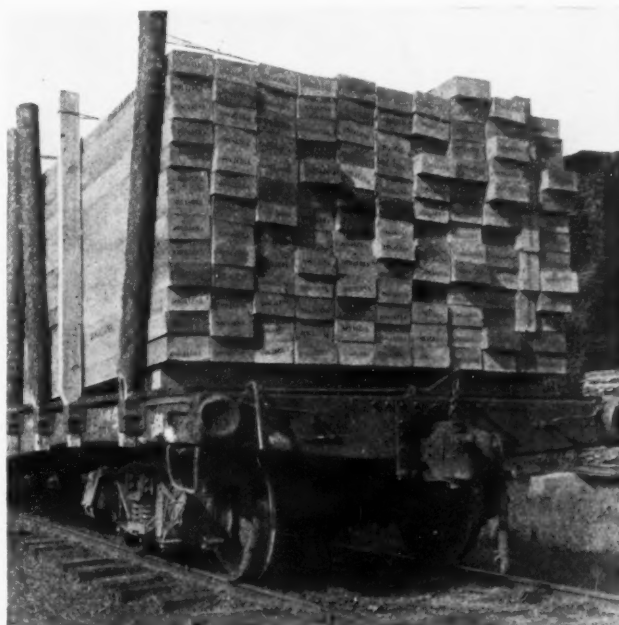
No manufacturer of lumber who is not honest, and who is not going to make his product in the best way possible and give value for money received, can afford to use a trade-mark. It is, therefore, a guarantee to the dealer and contractor that lumber is being furnished on their requirements that is in exact accordance with the grade specified in their purchase. The wholesale or retail dealer who buys a particular grade of lumber, and then sorts out the best of that lumber



Extra Large Timber Bearing the Brand of the Calcasieu District Mills and Also the Name of the Particular Mill that Produced It. This Makes a Double Guarantee of Quality.

and sells it as a higher grade, and sells what is left as the grade which he has purchased from the manufacturer, does not want trade-marked lumber. He is the sort of dealer who is making sales and not making customers. It is a regrettable fact, in reviewing the history of the lumber industry, that many manufacturers have not been honest with themselves; that there have been grade manipulations on the part of the wholesale and retail dealers, all of which have been at the expense of the builder and ultimate consumer. Trade-marked lumber will make such sharp practices and manipulations impossible.

The trade-marking of lumber will result in the development of good-will between the manufacturer, dealer, contractor and consumer; it will be a vital factor in the elimination of petty claims and unpleasantness; and tend to dispense with the temptation of poor weak mortals to substitute inferior material at the expense of his neighbor; and stand as a visual guarantee from the manufacturer to the dealer, to the contractor, and to the building owner that the material delivered is the material purchased.



A Carload of "Bogalusa" Heavy Timbers. Shaving Soap is Trade-Marked, Why Not Lumber?

Displaying Materials in a Way to Promote Building Construction

By E. A. Sterling

Manager Trade Extension Department of the National Lumber Manufacturers Association

THE merchandising of commonly used products includes the display of the actual products. In retail stores an attractive window demonstration is supplemented by a larger showing in the inside of the store.

Lumber which in the past has been kept for sale but not sold has not been displayed for the benefit of the buyer. He bought what he thought he wanted without knowing much about the material, or without seeing it in rough or finished form. A new spirit in retail lumber selling includes exhibit and educational material.

The man who builds needs help in planning and in selecting his materials. If he builds wisely and well his structure will last and give satisfaction. This makes him a contented consumer, who will come back for the same materials and to the same dealer.

Progressive dealers are now using display equipment in the form of samples of finished and unfinished woods, educational literature, and models of commonly used buildings, such as barns, granaries, etc. The wood samples make it possible to show clearly the varying characteristics of different woods. The colors, the grain and the weight may be quickly determined by a small sample. Finished panels show the way in which different woods take stains, varnishes and paints.

The dealers are advised that: "What wood, what grade and why should be talked by every progressive yard dealer. Customers should never be allowed to use the wrong wood for any given purpose. Don't let them buy timber which quickly decays for use in moist places or in contact with the ground; don't let them use too high grade or too expensive wood for



The Customers' Service Corner of the Office of M. I. Wilcox Company, Toledo, Ohio, Where Wood Trim, Actual Size, of Any Desired Wood, Can be Seen Finished in Any Desired Shade or Gloss. Miniature Doors are Also Displayed and Wall Board Finished in Various Ways. The Architect or Builder and His Clients Can Visit this Service Department with Real Satisfaction.

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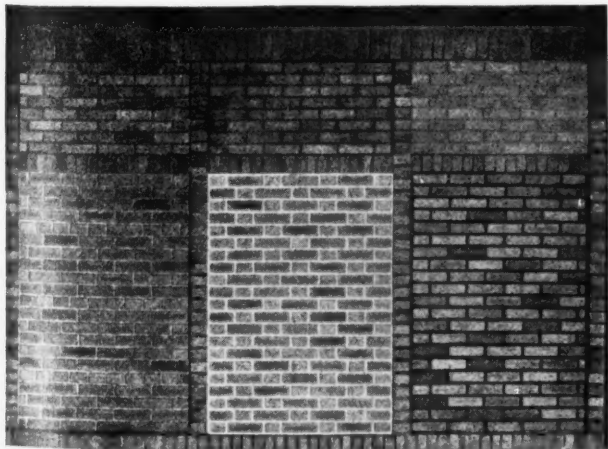


Model of a House Exhibited at the Cleveland Complete Building Show of Last Winter. Such Models Are Costly, But They Always Attract Attention.

protected interior situations. You can readily show them that it will be economy to spend more in some cases and less in others. One failure from poor advice or improper selection may lose a customer."

Models of Houses and Barns, Showing Construction

Small models of buildings enable the farmer or prospective builder to go over the details point by point; the advantages of any particular type of building can be seen, and changes in the plans made to suit the individual requirements of the builder. The models being offered by the National Lumber Manufacturers' Association to retail yard dealers are made exactly to scale with all details shown. The barn model, for example, is 26"x42"x34" high, and weighs 40 pounds. One end is covered, and the remainder in skeleton form, so that all of the inside details may be readily seen. The relative size of members, framing, bracing, siding and roofing are all clearly shown. Details such as sills and other timbers, which should be creosoted are brought out by staining these members a creosote color. The finished result is a model which is an inspiration to any progressive farmer to build wisely and well, and to patronize the dealer who furnishes him with such direct and helpful information.



Panels of Face Brick, Laid Up to Show Various Bonds and Mortar Joints and Shades of Brick, Encourage the Better Building Business for Lumber Dealers and Building Material Dealers. Above is Illustrated a Display in the Office of the S. S. Kimbrell Company, of Chicago.

Service for Builders and Their Clients

In connection with display equipment for the retail lumber yard office the same men are being urged to establish a complete service department. This is really a means of making the exhibit material of more definite and direct value, and combining with it the service which will make that particular dealer's office a headquarters for all that is good and helpful in "building wisely with wood." A properly organized service department will make the dealer who maintains it a recognized authority and leader in his community. It will bring new customers who wish to profit by his advice. It is natural that if they accept his help they will buy his materials to supply their needs.

A well organized service department should oc-



An Exhibit Building of Permanent Character Built Onto the Yard Office of the Geler Lumber Company, Ortonville, Minn. This Was Erected for the "Corn and Alfalfa Exposition" October, 1915. It Talks Concrete Construction, and Much Cement Building Information was Handed Out from It.

cupy a room set aside for the purpose. It should include samples of building materials commonly used, literature regarding their characteristics and proper use, plan books and pictures, reference books and wood samples and models which have already been referred to. All of these things should be as free as air, and every visitor made to feel at home, and under no obligations for the service rendered. At the same time all of this service should include the personality of the dealer, and the knowledge and advice which he alone can give. It is his own enthusiasm and experience which will back up the material which he has to sell.

Good-Will and Business Building for the Building Material Dealer and Contractor

By H. Colin Campbell

Director, Editorial Bureau, Portland Cement Association

FIFTY years ago the yards of a building materials dealer revealed a stock principally of lumber. Of course, there might have been found a few such incidentals as lime, plaster, cows' hair, and some drain tile. Portland cement was then a relatively unknown building material. Its manufacture had not been undertaken in this country; and what little was used came from abroad and was almost prohibitive in price.

The Dealer's Yard Has Become a Department Store

Go thru the yards of a building materials dealer of today and you will find that the yard has an aspect of the modern department store. In addition to the lumber and millwork assortment of some years ago, sand of various grades will be in stock—fine sand for ordinary plaster work, well-graded selected sand for fine aggregate in concrete construction, selected crushed stone or pebbles for coarse aggregate; various kinds of concrete reinforcing materials; concrete block; cement brick; ornamental concrete trim; various kinds of building and drain tile; clay brick—both common and face—many types of roofing materials—and Portland cement. By scanning the above list it can be seen that many of the items in stock are there because of the development of concrete construction.

Business today is built largely on service. There is little of that hateful rivalry which sooner or later marks the destruction of one, at least, if not both, of those who engage in it. Service is the new name for co-operation. Service builds good-will; it is one of the best assets which any business man or firm can have—an asset which can neither be bought nor sold, although many have attempted to deal in the commodity.

Service in business also means "knowing." There is one material best for some particular purpose. There is one best way only of doing a job, and the greatest service that the modern business renders its patrons

today is that which guides them to the choice of a right material for their needs of the moment and supplements this choice with help all the way thru, to attain the best results in the use of that material. If this fact is not lost sight of, the building materials dealer will recognize that every item of his stock in trade has one use at least to which it is best adapted; and if he makes concerted effort to promote the particular material for that particular use, business in every line will be "brisk, thank you."

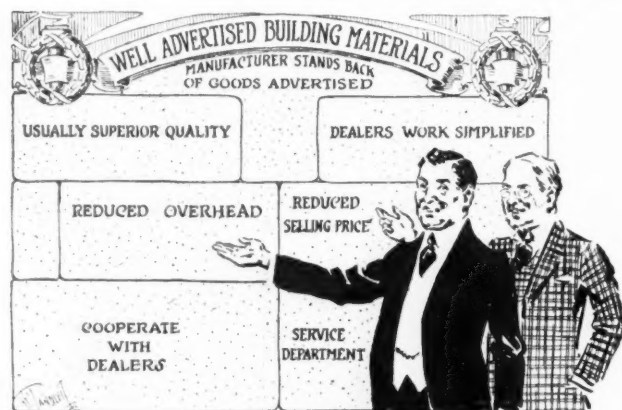
For many years concrete construction has been winning increased favor. Until within the last few years, however, concrete construction was exemplified largely by more or less monumental structures in the large cities, such as reinforced concrete factory or warehouse or the massive reinforced concrete bridge. But greater knowledge of the efficiency of reinforced concrete, its fire-safeness, freedom from upkeep, and its permanence, has created interest in this building material in the small town and strictly rural districts also. It might almost be said that concrete has in many cases paved its way to further favor and use because of the great mileage of concrete roads that have been built during the past three or four years.

Perhaps there are still a few, but doubtless very few, building materials dealers who today regard Portland cement as an interloper. It is just as well to at once recognize the fact that progress has dictated that Portland cement shall be one of the building materials dealer's stocks in trade. The principal thing for him to do is to acquaint himself with the possibilities of concrete construction so that he can help patrons make a wise choice of materials when they have building projects in view.

How Contractors and Dealers Throw Business to Each Other

There is no better man for the building materials dealer to tie to than the local contractor. One or the other in every community must be first to hear of some proposed construction. Each is dependent on the other. There should be no rivalry between them, other than of the most friendly nature. "A year ago," said one building materials dealer, "the liveliest contracting concern in my town was a firm made up of one member who did concrete work exclusively and another member who was a carpenter contractor. They dissolved partnership and naturally became competitors. But I did not let these men become my enemies nor enemies of each other. I went to them and explained that all prospects for concrete work I would refer to the concrete contractor and all prospects for carpentry work to the carpenter contractor."

As a consequence, each of these men deals as indi-



The Interests of Builders and Dealers Are Identical, and Can be Built Up Through Goods of Standard Known Quality Into a Solid Wall of Permanent Satisfaction.

viduals with the materials dealer, where formerly they dealt with him as partners; and altho working independently, they find that in reality they are still partners, because the carpenter builds his frame structures on a concrete foundation and his old partner does the concrete work.

Another building materials dealer makes it a practice to promote small extra jobs adjacent to any big one for which he has sold any of the materials. For instance, recently he succeeded in inducing a number of property owners to have the contractor who was paving the street lay at the same time private concrete driveways and sidewalks.

This suggests that a little grain of salesmanship goes well with all of this service and good-will. Sometimes it may be the contractor who is the better salesman—better promoter—and is the prime mover in building business for the materials dealer. In another case conditions might be the reverse; but always there are mutual interests involved and good-will to be built, and good-will can be built as easily for two as for one.

The dealer last referred to above showed home owners living along the street where his contractor friend was working that now was the right time to have contemplated improvements made because of the fact that the contractor and all his equipment were on the job. A better price could be made because there was no necessity for moving equipment and men away from and back to the job, and therefore the contractor, who was well known to all of the persons interested, would give them the benefit of these possible savings, in a lower price for their work.

It is not necessary to say that such efforts culminating in success are profitable. The dealer sold the materials for the extra work to the contractor. The contractor made his legitimate profits on the job, so he was repaid.

One of the greatest aids to promotion of this kind today is the large quantity of instructive booklets and pamphlets that various building materials manufacturers have available for use of any one interested. Some are prepared for the building materials dealer, some are prepared for the contractor, some are prepared for the public at large. When properly used, effective campaigns can be laid, followed up and put thru to a successful end by proper use of this trade literature.

Many dealers and contractors work together in securing effective distribution of such printed matter. Much of it is high class—in fact, the larger part of it may be so referred to. It is filled with suggestions that will help the dealer, the contractor and the consumer. Plans and estimates are characteristic of much of this printed matter. They make it clear to a prospective builder whether the contractor's figures are fair or not. They inspire confidence and build good-will.



Many a Dealer Has Thrown Work to the Building Contractor by Calling Attention to the Fact that a Low Price is Quoted Where Equipment is Already Near By.

Many contractors and building materials dealers co-operate successfully in advertising and promotion campaigns. Moving pictures and newspaper ads individually and jointly have remarkable educational and selling value if properly prepared, and present their story logically. There is a good impression created when contractors and materials dealers work hand in hand on such public occasions as county fairs and farmers' institutes. The two can well conduct joint exhibits. Each is usually willing to make such occasions a "fifty-fifty" proposition. The same is true of newspaper advertising. They can work hand in hand by telling their story in the same space.

However, one of the greatest drawbacks that the materials dealer has in his attempt at giving service is that often a job cannot be promoted because there is no contractor able to handle the work in the way the prospect wants it handled. Dealers come in contact with more farmers and small home owners than do the contractor. A large number of them, therefore, promote farm and home construction exclusively. Manufacturers personally and thru their trade literature supply dealers with good ammunition for convincing farmers not only of the fact that they should build certain classes of structures, but convince them as to the material which they should use. It should be the aim of every builder to select for the various parts of any building, the materials best suited to each part. If he cannot do this, it is because he is not progressive, has not kept in the front ranks of progress along building lines.

It's a Promising Field

There is any quantity of overlooked business everywhere. Real estate firms in every town are buying and selling property. They are in close touch with prospective builders—perhaps are opening up subdivisions where building operations are soon to be started on a large scale. Real estate men are specialists in

(Continued to page 126.)



Pleasant Stucco Home

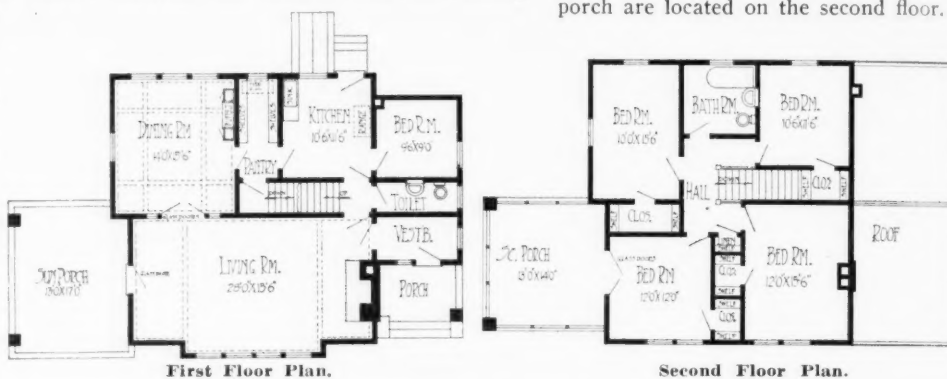
This Design No. 6866 shows an attractive house with its exterior walls finished in stucco with wide wood trim. A special feature which is evident in the perspective view is the entrance and porch arrangement. Only a small porch is provided at the entrance to the house. The larger porches are entered from the inside of the house, and are therefore private.

A large living room is provided on the street side of the house. In both the living room and the dining room the ceilings are finished with exposed

timbers. A sun porch opens from the living room. There is a handy pantry between the kitchen and the dining

room, provided with shelves and icebox.

One bedroom is placed on the first floor and four bedrooms and a screened porch are located on the second floor.



First Floor Plan.

Second Floor Plan.

Arrangement of House. Size 41 Feet by 32 Feet 6 Inches.



Cement stucco house with attractive sun porch. Size, 41 feet by 32 feet 6 inches. We can furnish complete set of blueprinted working plans and typewritten specifications for only \$8.00 per set. Blueprints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections; and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6866.



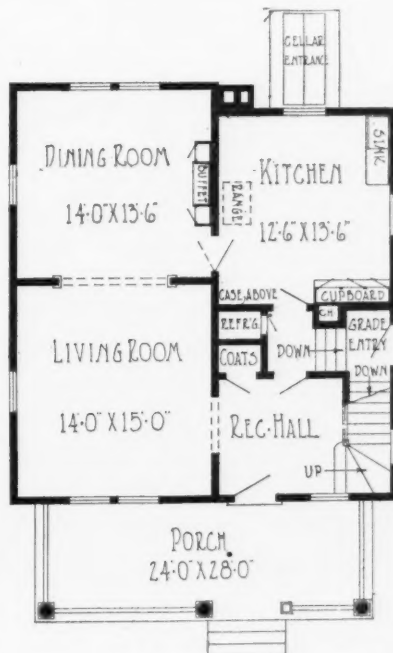
Beautiful home of seven rooms. Size, 28 feet by 30 feet. We can furnish complete set of blueprinted working plans and typewritten specifications for only \$10.00 per set. Blueprints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections; and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6869.

Seven-Room Frame House

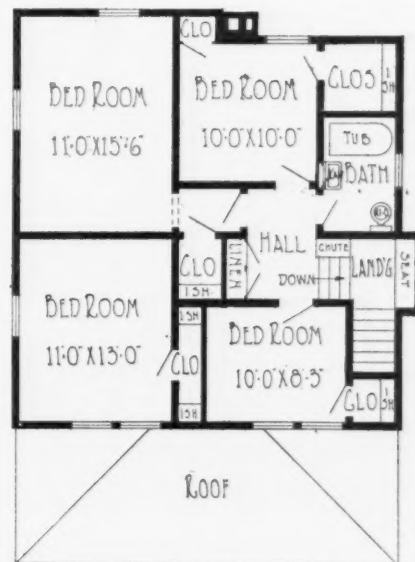
The exterior finish of this house is simple and neat. Beveled siding and shingles are used on the walls and the hip roof is shingled. The interior arrangement gives this house an especial appeal.

A large reception hall is entered from the front porch. This hall connects with the kitchen and the living room. The living room and dining room have a large cased opening between them, producing the effect of one large room. A buffet is provided in the dining room. The kitchen is large and airy and is fitted with a cupboard on one side of the hall leading to the reception hall, while the refrigerator is set into a nook on the other side of the hall door. The refrigerator is iced from the hall, handy to the stair leading to the grade entry.

The stair leading to the second floor is built up from the reception hall to a landing, at which point there is a seat built into a little bay, and then up to the second floor hall. There are four bedrooms and a bath on this floor.



First Floor Plan.



Second Floor Plan.

Arrangement of House. Size, 28 Feet by 30 Feet.

Well-Arranged Story-and-a-Half House

A house of the bungalow type having large rooms and making use of the second floor space is shown here as Design No. 6864. This house presents an attractive appearance from the street. There is a wide unobstructed opening between the heavy corner posts of the porch. The porch is built of brick up to the rail cap and the columns are plastered from this point to the low false arch across the front of the porch. The dormer breaks up the large roof area and because of the special attention given its design, the front of the house is perfectly balanced. The chimney is a distinctive feature of the exterior. It is built of brick and is tapered on the sides.

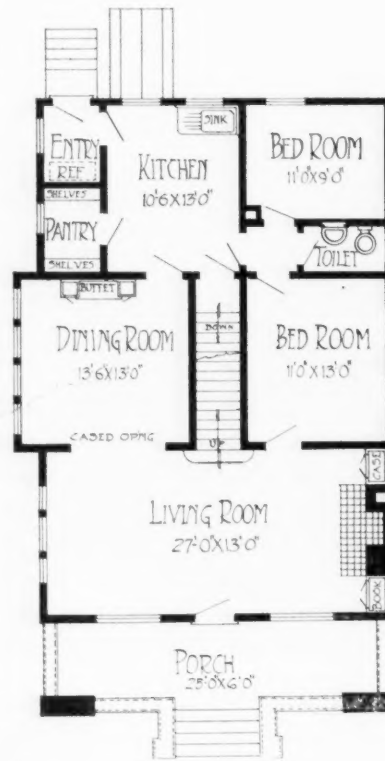
The large living room extends across the entire width of the house. The fireplace has a bookcase on either side. The stair leading to the second floor is directly in front of the door opening from the porch. A cased opening leads back from the living room to the dining room. The latter room is lighted thru four windows built into a bay extending across the room. A buffet is set against the rear wall where it may be seen from the front of the house.

At the rear of the dining room is the kitchen, pantry and rear entry forming a combination which will prove to be very convenient. The pantry is handy

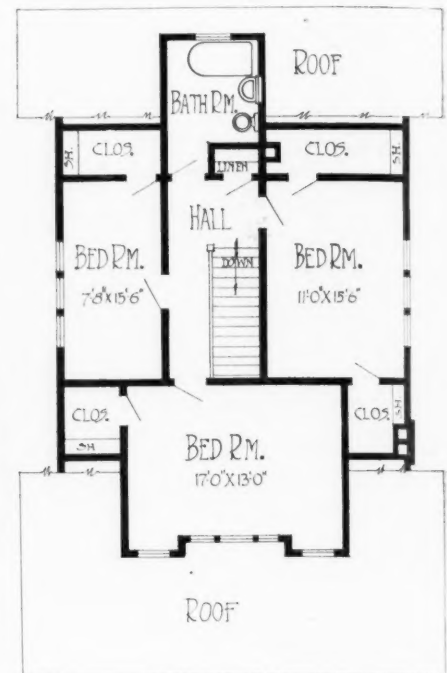
to the dining room, is fitted with shelves on either side and is large enough to permit placing a table against the wall under the window. The refrigerator is placed in the rear entry where it may

be iced without tracking dirt into the kitchen.

There are two bedrooms and a toilet on the first floor. Three bedrooms and the bath occupy the second floor.



First Floor Plan.



Second Floor Plan.

Arrangement of House. Size, 28 Feet by 40 Feet 6 Inches.



Eight-room bungalow type house. Size 28 by 40 feet 6 inches. We can furnish complete set of blueprinted working plans and typewritten specifications for only \$8.00 per set. Blueprints consist of basement plan; roof plan; first and second floor plan; front, rear, two side elevations; wall sections; and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6864.



Comfortable Six-room House. Size 37 feet by 43 feet. We can furnish complete set of blueprinted working plans and typewritten specifications for only \$6.00 per set. Blueprints consist of basement plan; roof plan; main floor plan; front, rear, two side elevations; wall sections, and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6867.

Convenient One-Story House

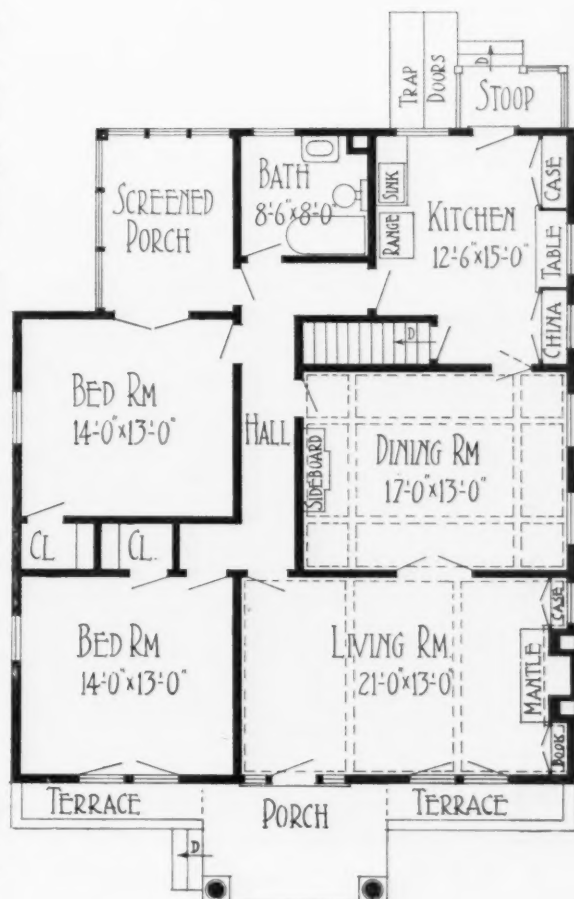
The house shown in the accompanying perspective and floor plan is a suggestion to those who are looking for a design which will embody a departure from the usual type in a one-story dwelling. The walls are finished with shingles and the gable type roof is shingled. The porch is placed in the center of the front wall and a small terrace is extended from the porch to the sides of the house. The porch design is very simple. Two columns are used to support the porch roof and the rail is eliminated. Shrubbery may be planted across the front and one side of the porch to take the place of the porch rail.

A great deal of attention has been given to the arrangement of the rooms in this house, resulting in what is sure to be a comfortable home. The living room is entered from the front porch. The wall at the end of the room is given up to the fireplace and two bookcases. There is a double French door opening upon the terrace in the front wall. The ceiling is finished with exposed timbers. A double door leads to the dining room and another door connects the living room with a hall leading to the rear part of the house.

The dining room is a large, pleasant room. A sideboard is placed against the inner wall. There are two large windows to light this room. A paneled ceiling offers the possibility of providing a novel scheme in the selection and arrangement of electric lighting fixtures.

The kitchen is especially well arranged. Along the side wall there is a china case built in two parts with a table in the center under the window. The cellar stair door is in the kitchen where it is most handily located because steps are saved in bringing vegetables and preserves to the kitchen.

Along the other side of the house are arranged two bedrooms and a screened porch. There are double doors leading from the rear bedroom to the screened porch, but another door opens from the porch into the hall. The bath is at the rear end of the hall. It will be noticed that the hall thru the center of the house makes all of the rooms independent of one another.



Floor Plan of Bungalow. Size 37 Feet by 43 Feet.

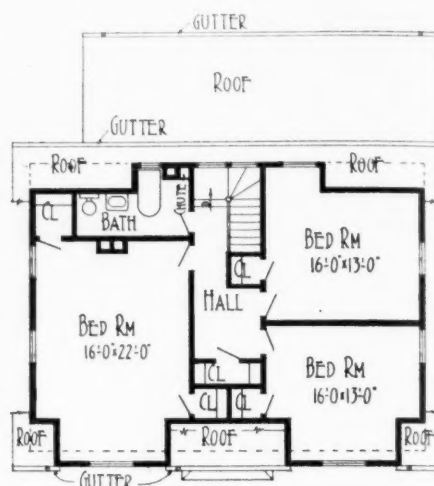
Attractive Gable Roof Home

This design brings out the unique effect which may be obtained by a proper handling of the gable roof. A house of this type is particularly adapted to an elaborate floral decorative scheme such as is shown in the perspective view. The house is finished with shingles both on the walls and the roof. Flower boxes are shown under all of the principal windows across the front of the house.

The rooms are arranged in a very convenient manner and a great many details are worked into the design which contribute to the comfort of those who make this house their home. The vestibule at the front entrance leads to a hall extending back to the kitchen. The large living room is on the left of this hall, upon entering. This living room is attractively finished with exposed timber ceiling, and a fireplace is built in the center of the rear wall. A cozy den or library occupies the front of the house on the other side of the hall. Back of this den is the dining room. A sideboard is arranged for in the dining room and two bookcases are provided in the den. A screened porch is built into the corner of the house at the rear of the dining room. The kitchen occupies the other corner of the house at the rear and a handy serving pantry is built between this room and the dining room. The refrigerator is placed in the rear entry.



First Floor Plan.

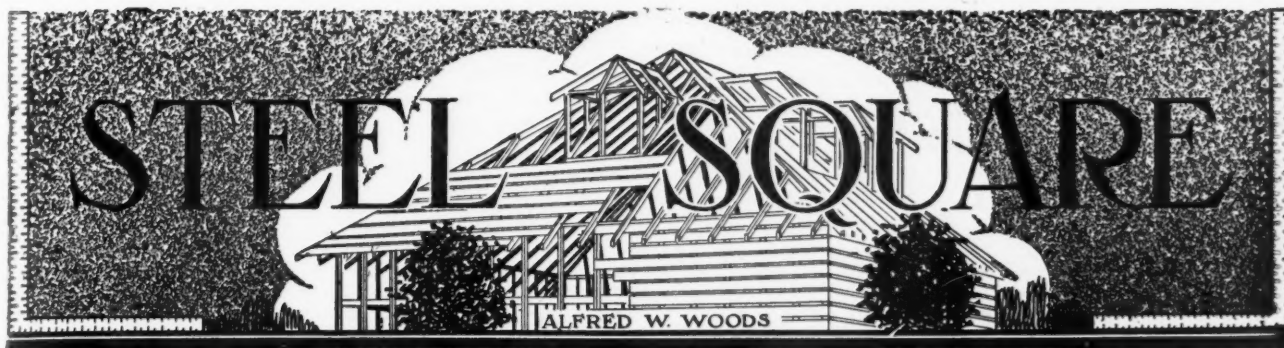


Second Floor Plan.

Arrangement of House. Size, 41 Feet by 41 Feet.



Seven-room artistic house. Size, 41 feet by 41 feet. We can furnish complete set of blueprinted working plans and typewritten specifications for only \$10.00 per set. Blueprints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections; and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6865.



Possibilities of the Steel Square

ILLUSTRATING THE USE OF THE STEEL SQUARE IN SOLVING GEOMETRICAL PROBLEMS

By A. W. Woods

A CIRCLE of any diameter may be accurately divided into any number of parts of equal lengths by simply taking the figures on the steel square that give the miter for a polygon, having a like number of sides as desired divisions in the circle.

For example, say we wish to divide the circle in five divisions; then lay off the radius on a line from 12 on the tongue and parallel with the blade and where the circle cuts the miter line, will be the length of one of the sides, as shown in Fig. 1. In this the circle is divided into five parts; 12 and $8\frac{17}{24}$ give the miter for the pentagon and it will be seen that the circle cuts the miter line at B and the length of this line back to the starting point, as 12-B represents the length of the chord of one of the equal divisions of the circle, or the same result may be had by squaring up from 6 on the tongue and by transferring the center of the circle to a point on this line and with same radius as before, the circle will cut at 12 on the tongue and also at the heel and by extending the miter line until the same intersects the circle, as at C it will be found that a line from this point to the heel will be the same as the line

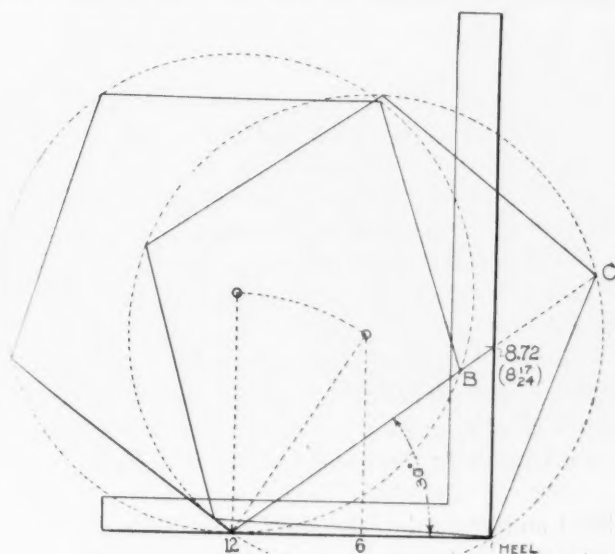


FIG. 1

from 12 to B in the first instance.

Having shown that it is the miter that governs the divisions of the circle, we will carry the subject a little further and show how the same governs in the laying out of a hopper or in roof framing.

In Fig. 2 is shown the layout for a pentagon hopper—12 and $8\frac{17}{24}$, as we said before, give the miter on a level surface for the pentagon and is the first line we take into consideration, because it furnishes the ground work upon which to build, regardless of pitch given the hopper.

The next thing is to decide on the pitch that is to be used. In this, we have taken 12 and 16 ($\frac{2}{3}$ pitch) and its length is found to be 20; and this length taken on the blade and $8\frac{17}{24}$ on the tongue will give the angle for the cut across the face of the board; the tongue giving the angle and in this connection it might be well to mention that these figures also give the angle across the back of the jack,

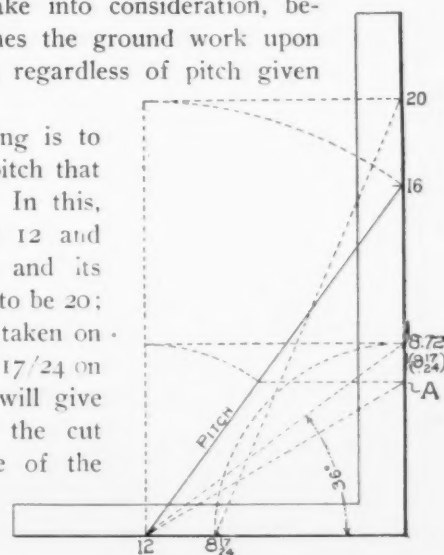


FIG. 2.

commonly called side cut, but in this case the blade gives the angle.

Now there is another cut to take into consideration and that is the angle across the edge of the board, called the miter. There are several ways of arriving at this, but we will only take the one we think is about the most simple of any. With one leg of the compass, set at 12 on the tongue and with $8\frac{17}{24}$ as radius, describe an arc as shown, from the vertical line to the pitch and the point where it cuts the pitch carried over to the blade, as at A, furnishes the point to use on that member, as 12 and A; the blade giving the angle for the cut. This has reference to a square edge board. If the board is first beveled

so to rest on a level plane when the sides are in position, then it is not necessary to go thru the above operation, as the figures on the square that we started with (12 and $8\frac{17}{24}$) will give the proper angle for the cut, the blade giving the angle.

In Fig 3 is shown the layout for the hexagon hopper and in this Mr. Subscriber from Des Moines, will find his question answered as what is true of the pentagon hopper is equally true of any of the other polygonal hopper by following the formula as here given.

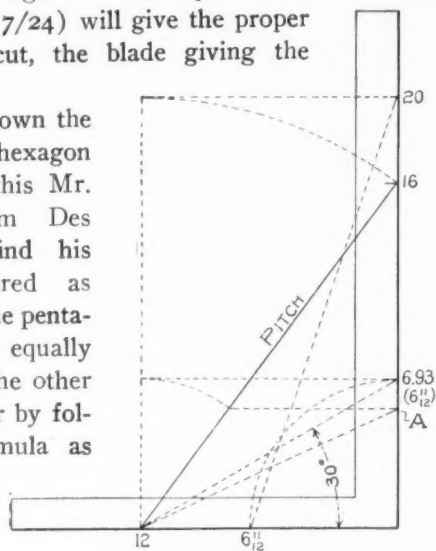


FIG. 3.

Not the Fault of Lumber but of Careless Building

Insistence on the proper use of wood, as the best safeguard of the lumber industry, and as the best method of preventing loss and damage by fire is the text of the two latest technical bulletins issued by the engineering bureau of the National Lumber Manufacturers' Association from its Chicago offices. There are two bulletins on this subject, one on the general phase of building codes, and the other on the special problems of the chimney, flue, smokepipe and fire-place.

The bulletins quote largely from the recommendations of the National Board of Fire Underwriters, and point these recommendations for proper construction of the home with specialized information from the standpoint of the timber engineer.

In introducing the technical recommendations, the letter says:

From the standpoint of the lumber industry it is recognized that:

Dwellings are usually the least protected of any class of buildings, and when of flimsy, improper construction constitute an unnecessary hazard.

Wood in such cases is condemned, when actually the fault is not with the material, but with the careless construction and disregard of the fire hazard.

The cost of proper construction in relation to the fire hazard adds only a small percentage to the total cost of the dwelling; yet gives returns in lower insurance rates, and greater safety far in excess of the additional expense.

Intelligent selection of lumber to insure the proper kind and grade for the particular locations, or different parts of a structure, is essential.

With proper selection should come the consideration of strength of the different kinds of timber. In all cases careful workmanship in framing and placing is necessary.

A consideration of great importance is proper firestops or fire barriers in dwelling house construction. This is one of the actual protective measures which is not as generally known or recognized, but fully as important as safe chimney, smokepipe, and fireplace construction.

Frame dwellings are the most common type, and are not only represented by the millions of existing homes, but will

continue to be built in the indefinite future. This is true for both economic and sentimental reasons. Wood remains the least expensive and most universally available material. At the same time it responds to architectural treatment in a way which introduces a strong appeal on the ground of beauty and sentiment.

The greatest progress towards fire protection will be made by incorporating in our ordinances and building codes proper safeguards, and by educating the people to the necessity of proper construction. To attempt to legislate wooden buildings out of existence is uneconomical and not the solution. Rather than this, simple and inexpensive safeguards, which will not place an unreasonable burden on the builder, should be provided.

The letter on chimneys introduces its safety recommendations with this pertinent phrase:

"It is unfortunately true that the general public which sees and feels the effect rarely appreciates the full importance of the cause. If a fire starts from a defective chimney or flue and burns a wood shingle roof, it would be more logical to pass an ordinance rigidly controlling the construction of flues and chimneys than one prohibiting the use of shingles. Since the burning shingle roof can be seen, legislation is directed against it, and not against the defective chimney which cannot be seen, yet which was the prime reason for the fire."

This letter then gives extensive illustrations, showing how defective flues cause fires, and how flues and chimneys should be constructed, this also being largely based on recommendations of the national fire underwriters.

A Sun Porch Designed and Detailed

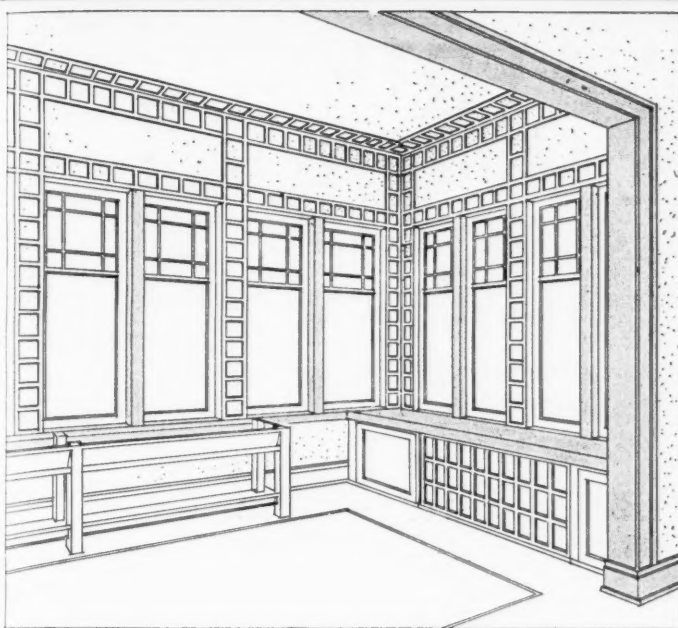
By Ralph W. Ermeling, Architect

WHEN a house has a southern exposure so that plenty of sunlight is assured there is nothing more conducive to cheerfulness and good health than a sun porch. It may be treated in a simple fashion without the richer finish and mouldings of the other rooms of the house.

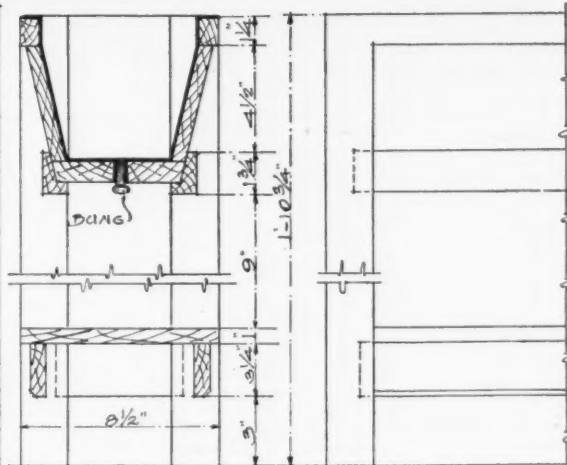
The sun porch shown here opens off of the living room without the French doors which are commonly used. Seats are built at the sides under the window sills with spaces under for radiators, and doors at the sides hinged with spring hinges at the bottom which provide space for the storage of children's toys or any of the innumerable things that might litter up the house.

A form of wall treatment somewhat trellis-like is used around the windows and at the ceiling. This is of very simple construction, the strips being $1\frac{1}{4}$ by $\frac{3}{8}$ inch. The same idea is carried out for the screen in front of the radiator, which consists of a frame work of $1\frac{1}{4}$ by $\frac{7}{8}$ inch strips set in squares, the whole panel movable so that the radiator may be gotten at for cleaning or repairs.

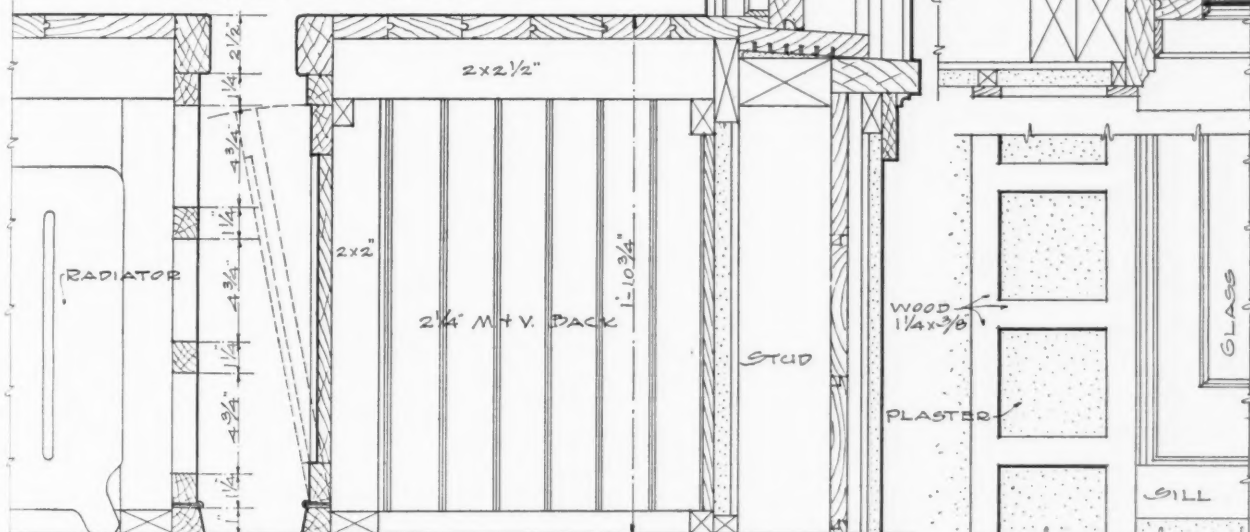
For the benefit of those who wish to use the sun porch as a conservatory or plant room, the trough-like flower box presents a receptacle that is movable, and an ornament to the room in keeping with its general character. The details show the plain box, metal lined and drained. The shelf below serves as a convenient rack for magazines and makes the flower box much stiffer in construction.



• PERSPECTIVE •

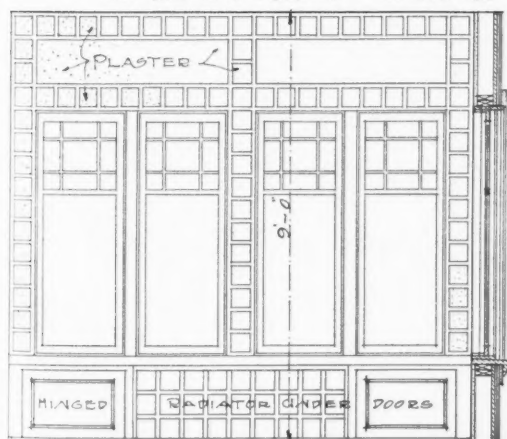


• DETAIL OF •
• FLOWER BOX •

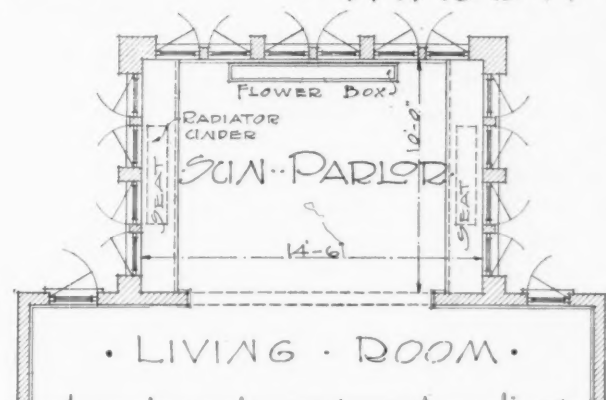


• SECTION THRU SEAT •

• DETAIL OF •
• WINDOW •



• END ELEVATION •
SCALE 1/4" = 1'-0"



• PLAN • SCALE 1/8" = 1'-0"

HOUSE INTERIORS - A - SUN-PORCH

Perspective Sketch, Elevation, Plan and Construction Details of a Sun Parlor Finished in Lattice Style Suggesting the Outdoors.
Designed by Ralph W. Ermeling, Architect. For Descriptive Notes, See Opposite Page.



BRICK CONSTRUCTION

for Modern Carpenters and Builders



A Good House at a Low Price

HOW TO BUILD OF BEAUTIFUL FACE BRICK VENEER AT THE SAME COST AS FRAME

EDITOR'S NOTE: In establishing this department the Editors propose to furnish timely information and inspiration that will lead to better home building.

A great many carpenters and builders have kept away from face brick because they were not quite sure about the details of its use; and also because they had no modern brick house designs to work from. We propose to supply both these needs. In these pages will be found, this month and every month henceforth, detailed direction which you can depend upon for handling brick work; also quite a number of good popular designs for brick residences, garages, and other brick buildings of the sort generally wanted.

The brick house today isn't necessarily a millionaire's proposition—attractive small house designs can be produced and the cost need run no higher than for stucco or frame.

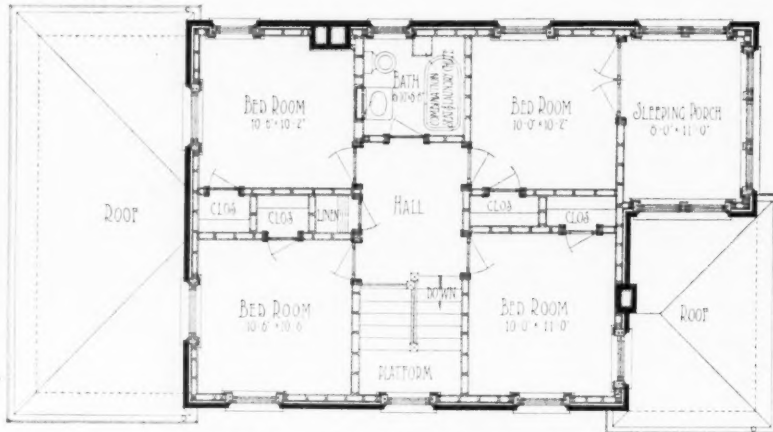
Some seeing this will probably ask, "But why brick construction for carpenters and builders?"

The answer is that in the great majority of cases the man who calls himself "carpenter and builder" is in reality, or at any rate in prospect, an all around building contractor, ready and willing to handle any and every sort of building construction for which there is a demand. In the past, most of his work may have been carpentry construction, but as other good materials came to his notice, he has adopted them also, thus qualifying himself to continue to be the *builder* of his community.

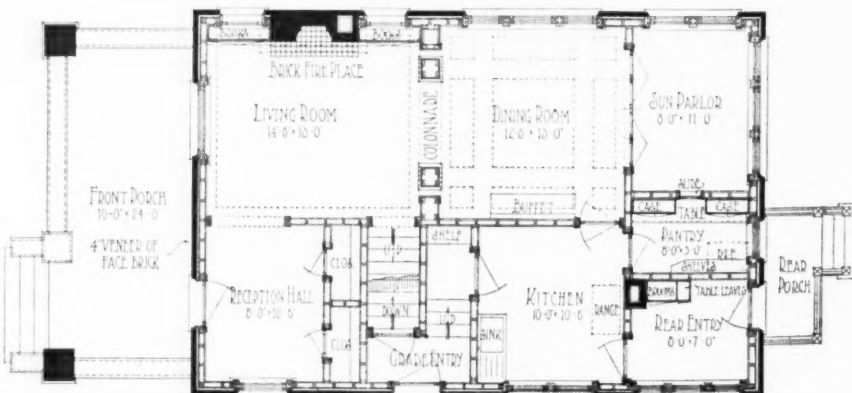
The face brick manufacturers started something when they took to making the modern rough tex-

ture face brick. A great and growing business is being built up. Thousands of prospective home builders are today interested in face brick because of its charm of color tone and texture who never would have given the old-time "red brick" a second thought.

So with the renaissance of brick for home building the "carpenter and builder" is becoming a full fledged masonry builder. The fact is that the wide-awake builder today is playing no favorites. He can say amen to each one of the association slogans, "Wood where best"—"Build with brick"—"Concrete for permanence." He can consistently favor all three of



Second Floor Plan of Brick Veneer House.



First Floor Plan of Brick Veneer House. Design No. 6857. Size 26 Ft. by 38 Ft. 10 In.

these and still not be untrue to any of them, since all the time he stands for good construction.

The modern carpenter and builder is in very much the same situation as his building trade brother, the retail lumber dealer. Very few lumber yards confine themselves any more strictly to lumber; they sell ready roofing, cement, lime, wall board, metal lath, drain tile, face brick, etc.,—whatever the builders in the locality need in addition to lumber. They are now building material dealers, just as the man who began fifteen

opportunities for common brick, terra cotta and every line of clay products which enter into a building, opportunities for display and exploitation of them on the part of the retail lumberman to the advantage of all concerned. The retail lumber dealer is recognizing the fact that he must be a retail dealer in building material, not merely a retail dealer in one or two lines of it, and whatever line of material gives promise of trade holds a lively interest for him."

It is the firm conviction of the Editor of the *AMERICAN CARPENTER AND BUILDER* that anything which will make for better building will benefit everyone con-



Photograph of Well Planned Brick Veneer House. Design No. 6857. This House, Requiring Twenty Thousand Face Brick, Has Been Built for \$4800. The Brick, Moderately Rough in Texture, Shows a Beautiful Play of Color Tones.

years ago as carpenter is now a general contractor.

The attitude of the brick makers' trade press toward this matter is interesting and to the editors of the *AMERICAN CARPENTER AND BUILDER* most gratifying. In the last issue of the "Clay Worker," Mr. T. A. Randall, its editor, writes under the general title of "Brick and the Lumber Dealer."

"There is undoubtedly room for some good co-operative work between the brick fraternity and the lumber dealers, especially in the smaller cities and towns, who commonly handle quite a line of other products in addition to lumber.

"It presents one of the finest opportunities of the day for face brick manufacturers who are very earnestly concerned with the proposition of displaying and exploiting face brick in its many textures and colors. The retail lumber yard is the center of information of the community for building material and the retail lumberman is the proper man to be supplied with samples of face brick and literature upon the subject of brick architecture. And, of course, there are

nected with the building field. For this reason we are enthusiastic for this face brick educational campaign. Face brick means substantial, well-planned building improvements that will be a guide and inspiration for other remodeling and new building.

There is undeniably a strong drift among home builders towards brick houses. The man who has three or four thousand dollars to invest is interested in face brick quite as much as his wealthier neighbor who plans to spend twenty thousand. There is a call here for well-designed, practical small brick houses and for brick construction methods that will save every dollar of cost possible. Why shouldn't every builder be ready to handle face brick veneering?

There is no reason why not.

Why ever "throw cold water" on the hopeful home

builder who has a leaning toward brick, even though most of your work has been of something else?

Again, there is no reason.

Think this over—study the designs and details presented here. If you have any questions, don't hesitate to ask them, and if you have had any interesting experience with modern face brick work, we would like to hear about it and see photographs of it.

Popular Design of Brick Veneer House

THE accompanying photograph, floor plans and details of construction illustrate an eight-room house of the popular square, hip-roof type. A glance at the floor plans on page 58 will show the convenient arrangement of the interior of this house. The construction of outside walls and of partitions is well indicated in these drawings. Notice how well insulated the exterior walls are.

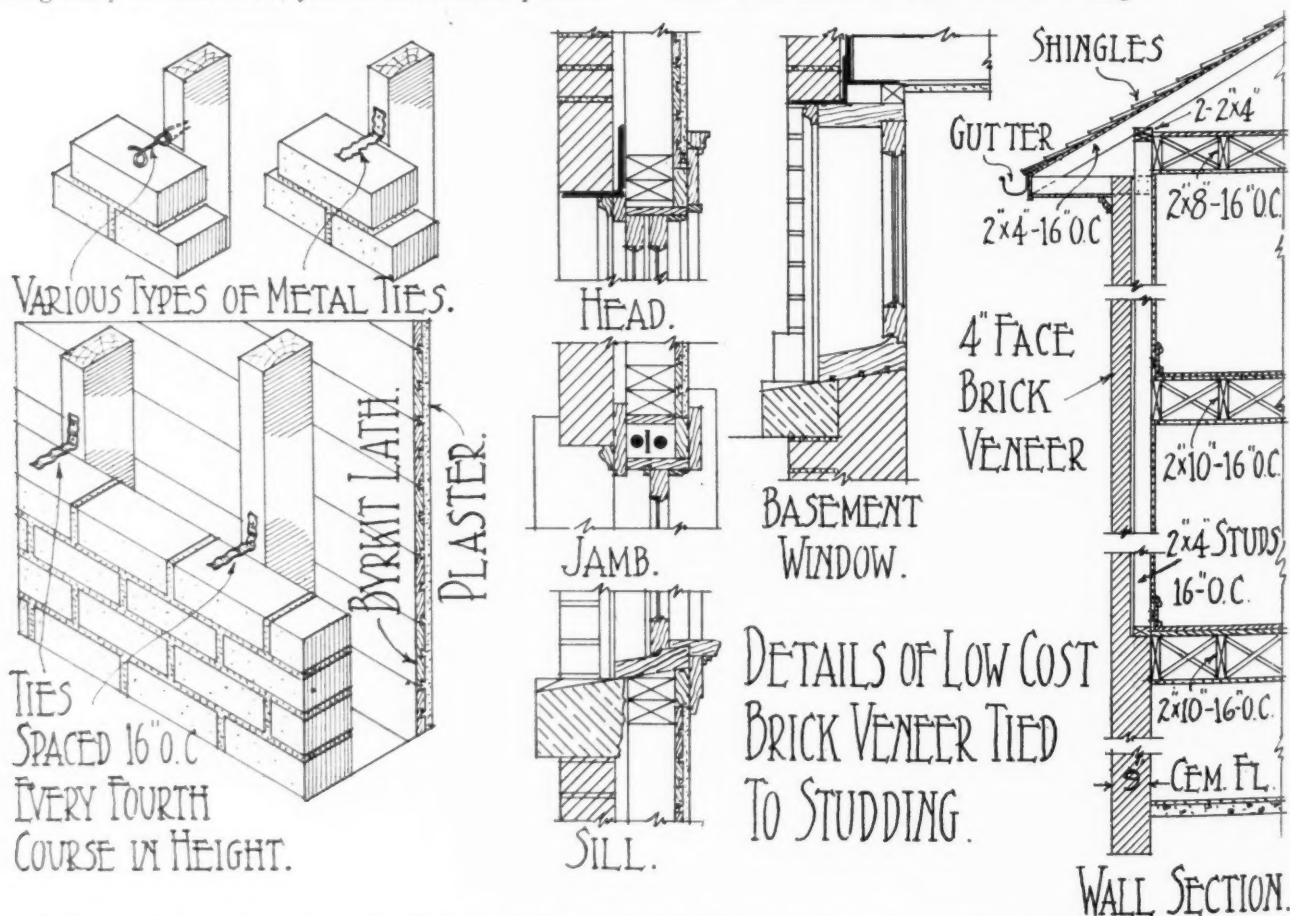
There are two methods in general use of building a brick veneer stud wall. One is with sheathing boards; the other without sheathing, the brick work being tied directly to the studs.

It is interesting to note that in brick's home territory where face brick is made and where everyone is familiar with the material, this cheaper method of construction is in very general use. The detail drawings on page 60 illustrate this low cost brick veneer tied direct to studding, while the detail on page 61 shows how the work is handled when sheathing boards are used. Sheathing is nailed on either horizontally, or diagonally as illustrated, just as the builder prefers.

In the low cost method Byrkit lath is used on the inside in place of ordinary lath, in order to provide the strength required to wind-brace the studding.

Notice how galvanized iron wall ties are laid into the mortar joint every fourth course of brick and nailed securely to stud or sheathing. A well laid brick wall, even if only one brick thick, has considerable strength to withstand wind pressure, and the simple bonding of the veneer wall to the wood frame of the house makes a very substantial wall.

In building brick houses to appeal to the average man we must remember his pocketbook and cut out unnecessary expense wherever possible. Many have a mistaken idea about heavy foundations being required for a brick veneer house. As a matter of fact, exactly the same foundation will serve for brick veneer as for a cement plastered or sided house. Foundation requirements vary somewhat in different localities, depending on the nature of the soil. In firm clay or well compacted gravel 9-inch foundations walls are sufficient for any two-story house. Often a wider footing is not required. Then, again, in loose soil 14-inch foundations with 24-inch footings may be required. Builders will use their best judgment in providing ample foundations according to local requirements. But the point is made that it isn't necessary to spend \$100 or more extra on the foundation just because the house is to be sided with brick. Use the same foundation as for stucco or siding.



Brick Veneer Walls Constructed in this Manner are Built at the Same Cost as All Frame. For Photograph and Floor Plans See Pages 58 and 59.



"Why Was It Impossible to Build the Kind of Home We Really Wanted?"

An Interview by C. L. Rorick

IN this interview Mr. Moore's statement opens a most interesting subject—a subject on which the Carpenter and Builder, the Building Material Dealer, and the Brick and Tile Manufacturer can profitably get together, for it is a known fact that brick and tile construction is in growing demand and that it is now within the practical reach of all home builders.

Next month Mr. Moore will have another statement of interest to our readers, in which he recites his experience in building that "cherished home of brick."—EDITOR.

MY name is G. W. Moore. I am 38 years old and married. We have three children and live in a village in the Middle West of 1,500 people. I have a retail business, and Dun and Bradstreet have affixed after my name the symbol H₃—\$5,000 to \$10,000—prompt pay.

From this you will see that I am an average business man. There are thousands like me in the United States.

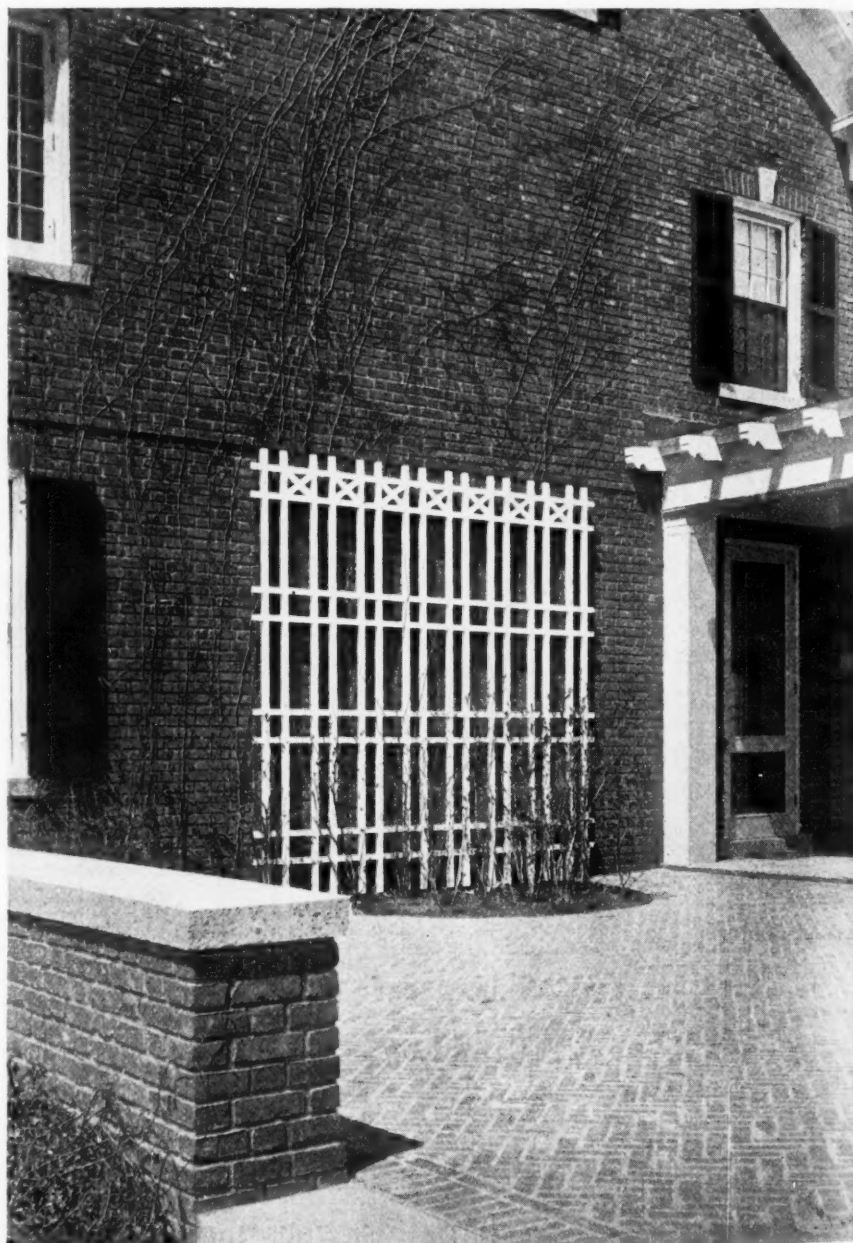
When we were married, fourteen years ago, we started housekeeping in a five-room frame house, and have moved since then a number of times, for one reason or another, always hoping that our next move would be to a home of our own.

In the spring of 1911 I had an opportunity to buy a well-located lot, and while business would not justify a home at that time, I knew that if things continued to go as they were going I would be able to build on it in a year or two. So I bought it.

From this time things began to take definite form. The local building contractor and the lumber dealer and building material dealer, when they heard I had bought the lot, both took it for granted that I was going to build at once, and wanted to figure with me, the builder on the labor, and the lumber dealer on the material, each submitting hundreds of attractive frame house plans, ranging in price from \$1,500 to \$6,000. I explained to them that I was not ready to build at that time, but that when I was I would take the matter up with them.

We had from the time of our marriage always hoped to build some day, and, of course, had talked of the general plan, but had nothing definite in mind. When I

bought the lot Mrs. Moore began to paste in a scrap-book pictures of houses, floor plans and general building hints that she took from time to time from the advertisements of the local lumber dealer, the national magazines and from the catalogs of the people who



Illustrations of a Hundred Charming Details of Warm Vine-Covered Walls, White Trellis Work Gleaming Out, of Brick Work Colors Soft and Mellow Blending Like the Hues of an Antique Oriental Rug, of Terraces Brick Paved in the English Style, Cool and Inviting on a Summer Day—All Such Pictures Fill the Heart of Man and His Wife Who Long to Build. What if they Do Cost a Little More? Isn't the Home Worth Building Well?

advertise houses by mail. She had written for these house-by-mail catalogs without any thought of buying from them—simply to get ideas, for she knew that the mail-order principle did not agree with the business we were in. The carpenter and builder, the lumber dealer, and the hardware man all traded at our store, and would naturally expect our patronage when we built a home.

Mrs. Moore was the daughter of a manufacturer in a nearby little city of 8,000 inhabitants and her parents lived in a brick and hollow tile house which cost about \$8,500 when it was built eight years ago. She never visited them that she did not come home and speak of that house—in the summer how delightfully cool it was and in the winter so warm and economically heated. In all her search for plans when the scrapbook came into being, she often spoke of a brick house, but found little that could be built for anything like the amount we expected to expend—a house to cost about \$3,000 to \$3,500, not including the lot, for which I had paid \$500.

On practically everything that Mrs. Moore found in brick house advertising literature the estimated cost was invariably in excess of \$5,000; and we regretfully concluded that brick, as much as we would like to use it, was too expensive for the average home builder.

We had, however, read in all of this literature that the first cost of brick construction was only 5 per cent to 8 per cent more than frame, and in the end it was really less expensive for the reason that the depreciation would be less, the repair and paint bills would be eliminated and the insurance rate lower—to say nothing of the fact that such a house would look more substantial, be cooler in summer, and warmer and more economically heated in the winter. This advertising must have referred, we concluded, to the better homes, altho the impression was given that these statements applied to any house of medium cost. Our only hope was that some day we would be better fixed, and then we could build that cherished home of brick.

In the spring of 1914 my business seemed to warrant a permanent home for my family and I made active plans to build at once.

We found the building contractor and the lumber dealer of much assistance in working out the actual plan. With our scrapbook and their catalog of hundreds of attractive frame bungalows and residences, for which they had complete bills of material, we began to eliminate, and it finally centered around a



The Pursell-Grand Company, Building Material Dealers, Cincinnati, Ohio, Have the Idea for Encouraging Better Building. They Display Face Brick and Terra Cotta Trim in a Way to be of Real Assistance to Architects, Builders and Prospective Building Owners.

plan for an eight-room house we found in the dealer's catalog which, with a few minor changes, could be built complete for \$3,240.

In the negotiation Mrs. Moore asked how much additional it would cost to build with brick, and we were promptly told that a brick house, such as we had selected, could not be built for less than \$6,000. We called their attention to the claim of the brick and tile manufacturers that there is only a difference of 5 per cent to 8 per cent in the first cost between brick and frame construction; and both the contractor and lumber dealer said they guessed that was only a theory, as none of the manufacturers had ever come to them with such comparative costs taken from jobs which had actually been built. They further stated that if such was the case, they would be glad to have some proof of it. But we were ready to build and could not wait for them "to thrash it out," so we built of frame instead of brick, when we really preferred the latter, and I am still wondering why it was impossible to build the kind of home we really wanted.

Some day I am going to be able, I hope, to find the answer.

The Sequel of this experience in home building will appear in the January, American Carpenter and Builder.

Face Brick Colors

"MODERN face brick gives permanent artistic natural color tones in a wide variety of shades in buffs, grays and reds. The color scale varies from the softest pinks thru delicate reds and yellows, through the light browns, dark browns, purples and steel blacks. The riot of color tones softening and blending together makes a beautiful wall surface."

Old House Overcoated with Brick at Cost of \$700

DETAILS OF INTERESTING REMODELING JOB AT STREATOR, ILLINOIS

FOR some years past, Mr. Thompson Poor, of Streator, Ill., had been noticing that his residence was taking on a dilapidated appearance. It was one of those old-time frame houses of generous dimensions, and served the needs of the home very well. Every second year, it is true, there had been required a tidy little sum for repainting, and even with that care the weather boarding was getting to the place where the paint would no longer cover the ever-growing defects.

Moreover, styles in house building change. The newer homes had a decidedly different look, especially as to the front porch. The Poores were getting dissatisfied—wanted to modernize. Six years ago Mr. Poor had his light jig-saw-work porch torn off and a broad, straight line, substantial brick porch built on in its place. This was in line with the times and gave the whole place quite a rejuvenated appearance.

Time went on and the weather boarding got no better. Mr. Poor, looking at his brick front porch and seeing it standing trim and staunch, untouched by the weather and needing no paint, finally got a hunch.

"Why not overcoat the entire house," he thought, "with face brick?"

He put the proposition up to a local builder, and they talked it over. Just because it hadn't been done before in that community, they decided, was no reason why it shouldn't be done. And the contractor thought he knew how he could handle some of the little details that would come up on a proposition of this kind.

Before going ahead, however, Mr. Poor and the contractor went over the house carefully to see what outside repairs would have to be made in case the brick veneering was not done.

They found that necessary repairs of renewing clapboards, window casings, corner boards, etc., together with repainting all over, would be about \$250. The 18,000 face brick required for overcoating would cost \$270, and the labor of laying them up would bring the overcoating expense to about \$700 this figure including any miscellaneous repairing to make it a good job. It was evident, then, to Mr. Poor that the actual extra cost of the brick finish would be about \$450. It seemed worth while and he instructed the builder to



The Remodeled Residence of Mr. Thomson Poor, Streator, Ill. A Veneer of Face Brick Laid Up Without Removing the Clapboards at a Total Cost of \$700, Increased the Selling Value of this Property \$2,500.



Side View of Old House on the First Day. Notice the Brick Porch Which Had Been Built on Six Years Previously. The New Veneering Was to Match This Porch.

go ahead. The job was undertaken and soon completed.

The photographs show the progress of this interesting remodeling job and how the special details were handled. Notice that a concrete footing was first laid extending the old foundation wall to support the 4-inch brick coat. Every fifth course of brick

is tied to the framework of the house by driving a line of ten-penny cut nails, spacing one to each brick. This gives a secure bond. The regular way to do this would have been to use galvanized iron wall ties, very likely at less cost than for the nails.

The bevel siding was not removed.



Detail Showing Concrete Foundation for Brick Veneer, Also Method of Tying Brick to Framework of House by Means of 10-Penny Cut Nails.



Detail of Supporting Brick Over Porch Roof With 4 by 4 in. Angle Iron Fastened to Joists With Lag Screws.



Detail Showing 4 by 4-Inch Angle Irons Bolted to Studding to Carry Brick Veneer Over Porches and Other Window Openings.

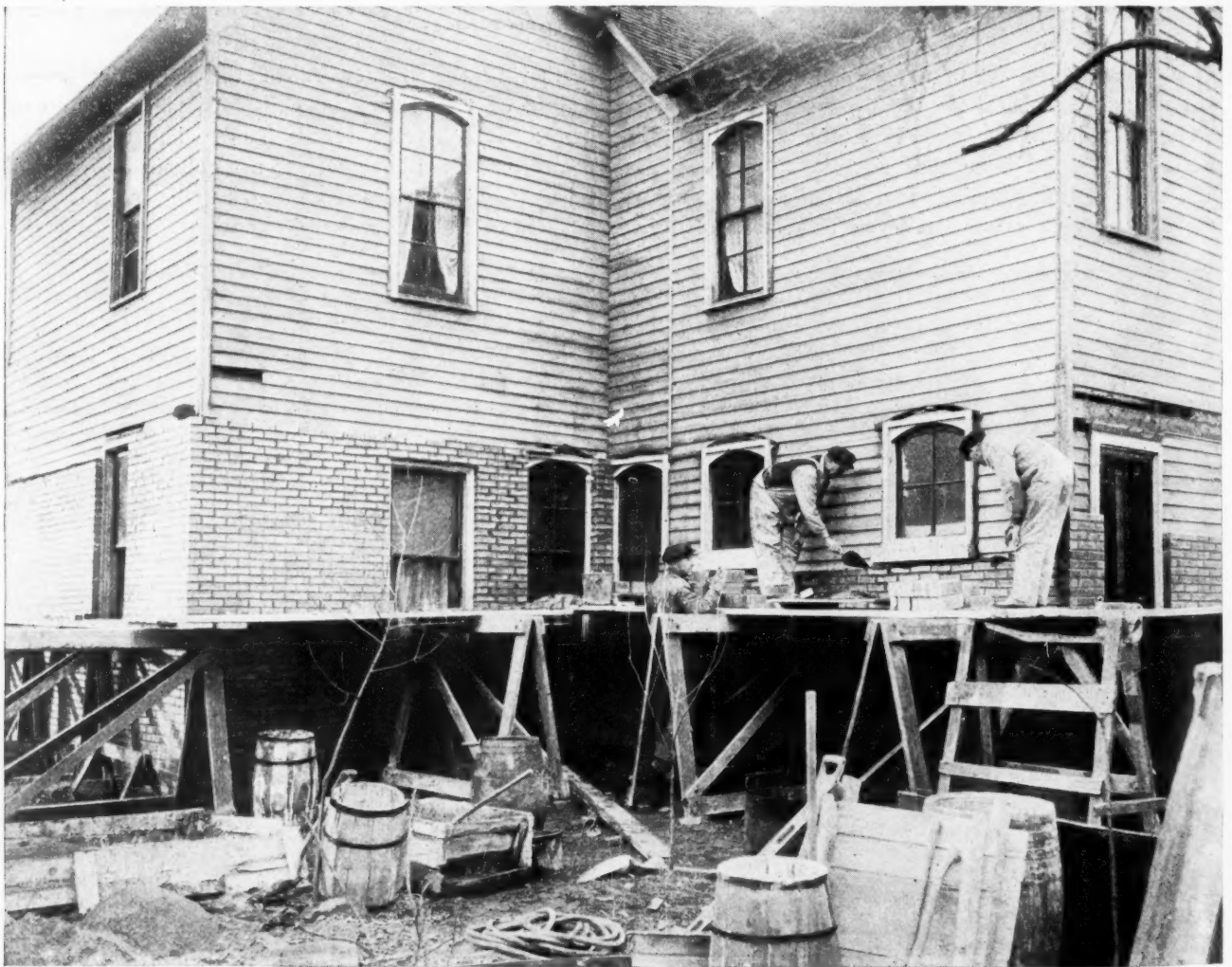
The window trim was handled by nailing on new outside casings, rather narrow but deep and having a square outside edge to make a tight joint against the brickwork. Over the windows 4"x4" angle irons were bolted to the studding by means of lag bolts. Notice in the photographs that this angle iron bearing is also used to carry the brickwork over the porches.

The finished house certainly makes a fine substantial appearance. The owner figures that whereas before it was worth perhaps \$3,000, it could now be easily sold for \$5,000, an increase of \$2,500 in valuation, at a total expense of \$700. It is no wonder that both the owner and his contractor are congratulating themselves on this job.

The improved appearance of the place isn't all of the story, either. The house is much warmer in winter—that northeast room being much easier to heat. Even on windy days the furnace isn't balked as it used to be. Evidently the brick walls are wind tight.

✦
A YOUNG Canadian went to London last winter and was making a call upon a very pretty young woman whom he had met there for the first time.

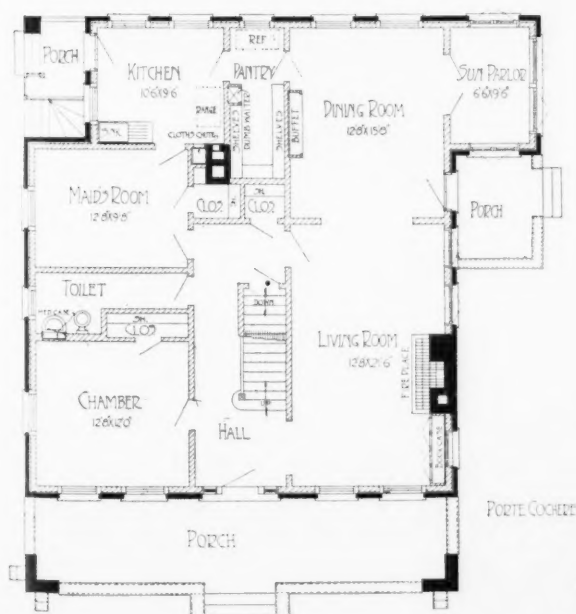
"Do you have reindeer in Canada?" asked the young lady. "No, darling," he answered. "At this season it always snows."



View of Remodeling on the Fourth Day. Notice How the Window Casings Have Been Built Out to Make a Tight Joint Against the Brick.



Beautiful brick veneer home. Size, 25 feet 9 inches by 40 feet 6 inches. We can furnish complete set of blueprinted working plans and typewritten specifications for only \$10.00 per set. Blueprints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections; and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6858.



First Floor Plan.



Second Floor Plan.

Arrangement of brick veneer house. Size 35 feet 9 inches by 40 feet 6 inches.

Well-Designed Brick Veneer Home

The perspective view above shows in a limited way the beauty of Design No. 6858. Reference to the floor plans will show that the rooms are arranged

in a most convenient manner. In the floor plans the wood frame of the house is indicated by the shaded parts while the brick parts are shown in solid black.

The brick veneer construction con-

sists of a shell of face brick approximately 4 inches thick built up from the foundation to the roof and bonded by means of galvanized iron wall ties to the sheathing or direct to the studs as desired.



First Floor Plan. Second Floor Plan.
Arrangement of House Design No. 6868. Size 24 Ft. by 27 Ft. 6 In.

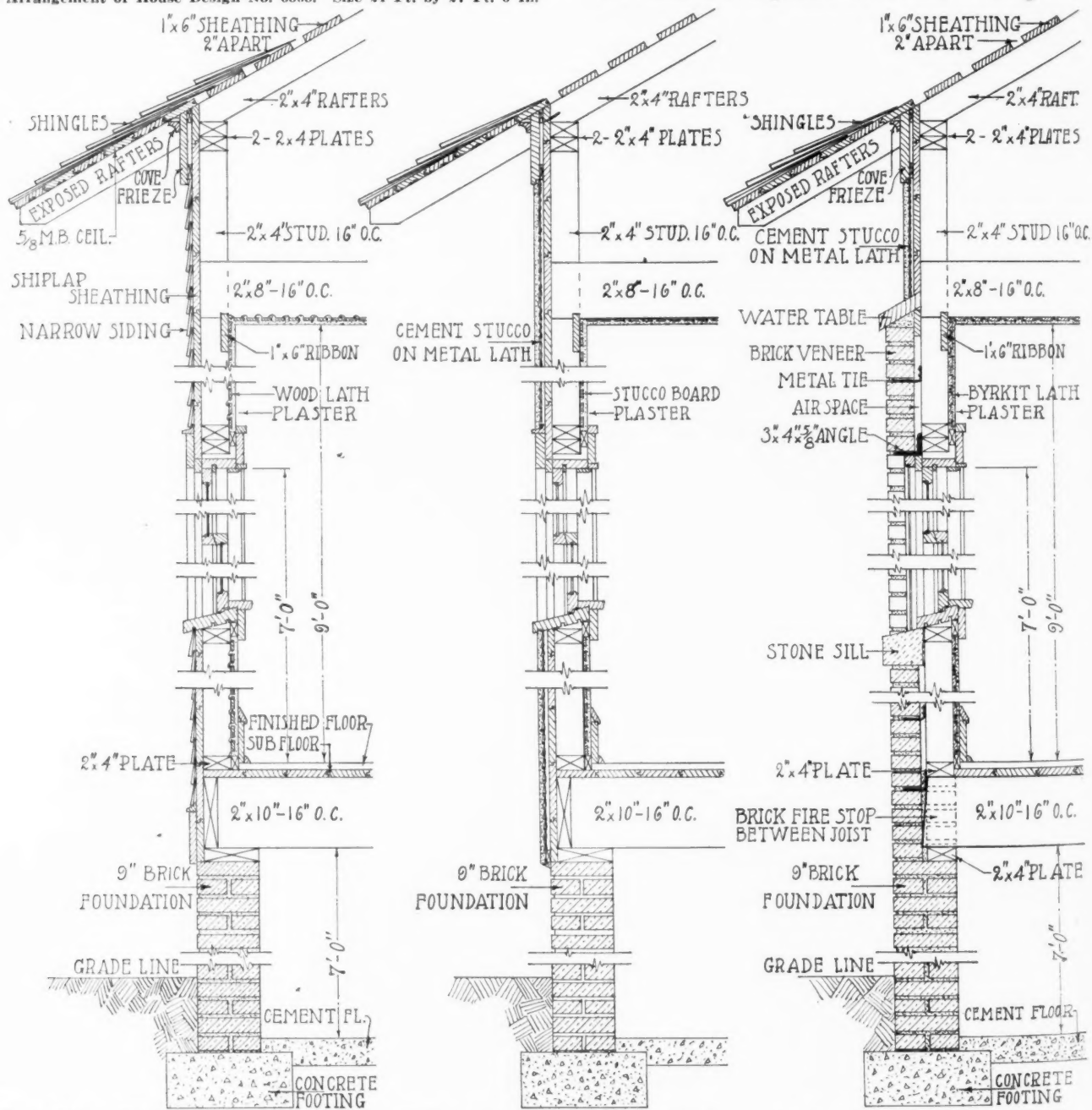
Which Kind of Outside Walls?

At the Same Price Would You Choose Siding, Stucco, or Face Brick?

CONTRACTOR WRIGHT, who does most of the building for the Leonard Agency real estate people of Canton, Ohio, states that he makes no difference in cost between face brick veneer tied direct to studs and beveled siding over $\frac{7}{8}$ -inch sheathing boards.

"I give 'em whichever one they want," he says; "though here in Canton most seem to prefer the fire-resisting exterior. For about ten per cent more I back up the brick veneer with what we call Jumbo tiles to make an 8-inch masonry wall."

The metal lath engineers have been devising meth-



Bevel Siding, Sheathing, Studs, Lath and Plaster.

Cement Stucco on Metal Lath, Sheathing, Studs, Stucco Board and Plaster.

Face Brick Veneer Tied to Studs, Byrkit Lath and Plaster.

Three Methods of Wall Construction for House Design No. 6868, as Illustrated on Page Opposite. All Go on the Same Foundation. Take Your Choice—They All Cost the Same.



Above, Face Brick Veneer with Stucco in the Gables.



To Left, Cement Plaster on Metal Lath.

ods of operation to bring metal lath and cement plaster walls down on a price level with wood siding. The sheathing boards can be omitted if the studs are braced or if stucco board is used for the inside plastering, as it develops high strength to withstand wind pressure racking. In some localities contractors figure stucco at the same price as siding.

But after all, price is a variable thing. It is not the same for any two contractors nor for any two communities. However, take these three ways of building the outside of this pretty little 5-room house; the difference in cost would not be

enough *anywhere* to count much with the average owner. He will want to build in the way that seems to him most attractive, durable, well insulated and permanent.

These photographs show in a unique way how pretty this little home is no matter how you build it. The details show the methods of construction used. The foundation is the same in every case; so are interior arrangement and construction.

Which do you choose? And why?



A Practical Little Home Design (No. 6868), Built in Three Different Ways to Show the Use of Three Materials for Outside Walls; Namely, Clapboards, Cement Stucco, and Face Brick Veneer. If Built as Detailed on Opposite Page, the Cost is About the Same for All Three.

How a Manual Arts Man Builds a Home

DETAILS OF WELL PLANNED BRICK AND STUCCO RESIDENCE AT COLUMBIA, MO.

By Ira S. Griffith

Professor of Manual Arts, University of Missouri

THERE is a strong drift in many localities toward houses of brick and of Portland cement construction. The brick veneer house is a winner. Home builders are favoring it, and you have to admit that the outside walls laid up of the modern rough texture face brick with decorative mortar joints do look mighty fine. The stud frame and sheathing guarantee a warm house, and make this brick veneer type of construction more than ever proper work for the carpenter and builder.

"A combination of materials is the popular thing today, making for variety. We see houses bricked up to the second story sills and stuccoed above. It is a slightly combination. We see a pretty little frame bungalow with wide board siding and a brick porch, and we set it down as a distinctive idea worth copying.

"Builders and architects are getting to be very clever at scheming out these unique effects. They believe in the harmony of all the modern building materials and favor using them all, just as the job seems to require without playing favorites with any. There is no place in the modern building industry for those who are all for concrete, or all for wood, or all for brick, or all for hollow tile, or all for sheet metal. The modern builder, like the modern architect, knows the

good qualities of all and uses each when it will best serve the purpose at hand."

THE editor will remember that this fine statement of the situation appearing on page 35 of the November issue of the AMERICAN CARPENTER AND BUILDER was followed by a request for photographs of work done by the readers. The writer is submitting herewith photographs and tracings of a home recently constructed after plans and specifications of his own make by Stewart Brothers at Columbia, Mo.

The walls are of brick veneer, a paving block being used with a rich red "bloom," slightly mottled. A chocolate colored mortar was used and the joints raked. The second story is of cement left natural, medium rough cast. The wood trim is undressed cypress stained a rich, deep brown. The roof is stained a dull Indian red.

A number of distinctive "features" might be pointed out. Among these, the low hanging eaves

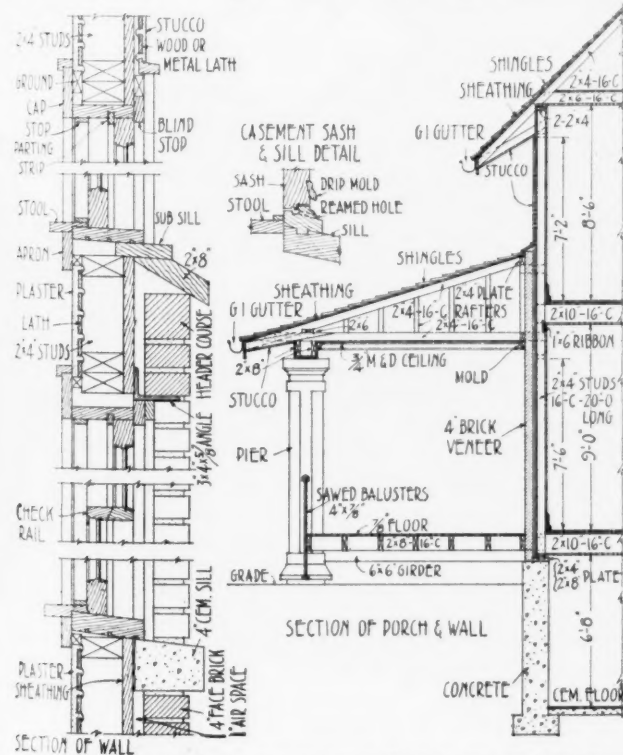


Seven-Room Brick Veneer and Stucco Residence, Planned by and Built for Prof. Ira S. Griffith, of the Manual Arts Department, University of Missouri, Columbia, Mo.



on the second story. Their low overhang makes it possible to leave the windows of the sleeping rooms open summer and winter without danger of rain blowing in. The soffits of the eaves are cemented with the light gray cement which serves to reflect plenty of light into the rooms. The sleeping rooms are provided with lavatories, which may be kept well warmed thruout the cold nights while the main room is open to fresh air.

The cedar closet, the rather high lavatories and sinks, the abundance of closet space, and especially the locker space in the lower hall, are the results of suggestions by "the lady of the house," who feels that "the men" might learn something about house



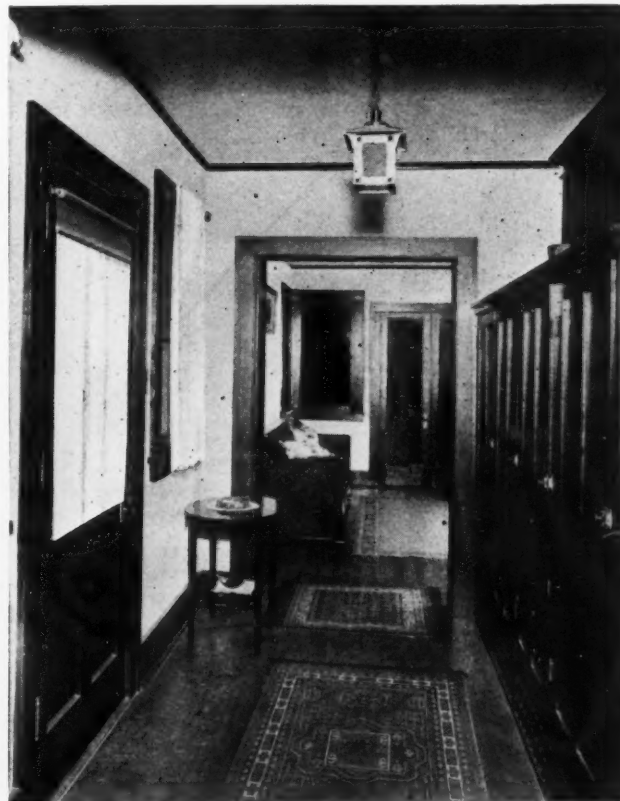
Details of Brick Veneer Construction Used in the Griffith Residence. 2 by 4-Inch Studs are Set 16 Inches on Centers; Sheathed With 3/4-Inch Boards From Sill to Plate. 4-Inch Veneer of Face Brick is Laid Up to the Second Story Window Sills, with Cement Plaster Used Above.

planning if they would try to "keep house" awhile.

The electric fixtures are home made, that is, the main fixtures are.

While casement windows have certain limitations, whether swung outward or in, they add much to the distinctive appearance of a dwelling. This house makes use of casement windows on the front and in other places protected from the beating rains. At other places the "old reliable" guillotine type, or double hung sash is made use of.

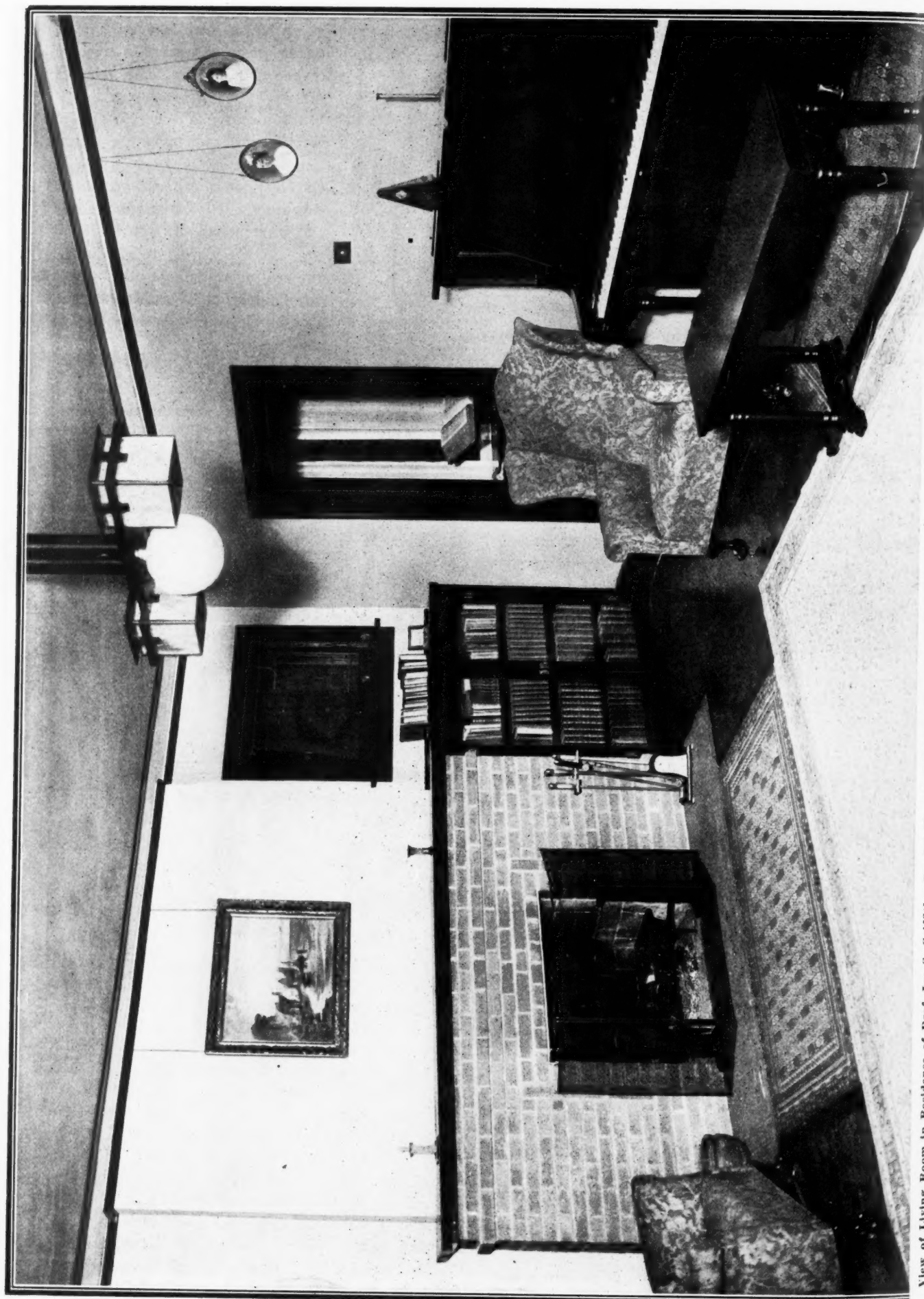
All casement windows and certain other sash are bordered with straight-line effects made by sand-



Photograph of Reception Hall Showing Battery of Wardrobes.

blasting. The reason for this type of ornament rather than leaded glass bands was due to the fact that the "lady of the house" objects to leaded glass and small lights on account of the increased cost of housekeeping—not a small matter in these days of h. c. of 1. The milk-white border bands give a pleasing effect, and the windows may be washed as easily as the single large glass, which these really are.

The trim thruout is simple, being merely a plain base and casing with a backband carried around each. The hall and living room are "done" in mahoganized birch, the remainder of the house in Southern pine stained a fumed oak brown. All standing woodwork



View of Living Room in Residence of Prof. Ira S. Griffith. Special Electric Lighting Fixture is Worthy of Notice. The Window Over the Book-Case Shows Etched Lights Which Give the Effect of Lensed Panes, and Make the Windows Much Easier to Clean. Brick Fireplace and Built-In Bookcase Are Well Handled.

is finished with a flat varnish.

Floors over the entire house, even in the closets, are of select plain sawed red oak. Experience has shown that no other floor is so easily cared for as oak. They are filled and waxed, except in lavatories and kitchen.

Walls are finished in a medium grit sand plaster with just enough "putty" mixed to give a sort of silver gray, a fine finish without further treatment when the plasterer is careful in his work. Keene's cement is mixed in in quantity sufficient to keep the walls from "shattering." Walls and ceiling are completed with a ceiling banding of simple line.

The lower hall presented a problem at first. "The lady of the house" was certain there must be ample closet or cloak room near the entrance. The designer was quite certain there was no room for any such thing. The solution, and a happy one it has proven, came about thru making use of lockers placed as indicated on the floor plan and equipping them with a patented hanger, a knowledge of which was secured while "reading the ads."

Since the designer was "working for himself," he used what ingenuity he possessed to "cut the cost" of the house as far as could be done without sacrificing

its worth. All exterior mouldings such as those about the porches, were the triangular pieces ripped from the water table of the second story. The balusters of the porches are of rough sawed cypress, the ornamentations being secured by sawed V's, as shown on elevation. Only good clear stuff was used. Even the subfloors and wall sheathing were of matched six-inch flooring that dust and cold might have less chance to enter. This latter may seem "old foggy" in these days when we are told that "sheathing is only used any way to provide a support for the building paper," but the writer prefers to save in other ways.

The exterior view was taken shortly after the grading was done and before the shrubbery and vines were set out.

The plans were followed with the exception that the stairway platform was given more room and the length of building increased to give narrower but longer rear bedrooms with wider lavatory or dressing room.



YOU built it; he pays for it; she uses it; whom should it suit? Not YOU—you are THRU! Not HIM—He is thru. But HER—She has to LIVE WITH IT.

H. J. BLACKLIDGE.



Dining-Room in Residence of Prof. Ira S. Griffith, Columbia, Mo.



Noon Hour Talks by the Boss Carpenter

Talk No. 53 Factory Design (continued)

New Series No. 10

THE BOSS TELLS HOW TO FIGURE THE SIZE OF TIMBER POSTS OR COLUMNS TO BE USED IN A SMALL FACTORY BUILDING

DURING our last two talks" said the Boss, "we have figured the thickness of planks necessary for the roof and floors and the size of beams and girders needed to support the roof and floors of a small factory building as shown in the illustration of our previous talk. Our next step is to find the size of the timber posts or columns needed to hold this roof and the floors in place.

"Posts for factory buildings of the type shown, especially if the building is to be of the mill construction type, should be of square section timber with the ends flat or nicely squared off so that they will have an even bearing on the two end surfaces. Such posts should be placed in a direct line as shown in Fig. 10A, and in such a manner that the center of each post is directly over that of the one below.

"Timber posts should be fitted with steel or iron post caps at each floor and should rest on a steel

or iron base plate just above the level of the basement floor. No post should be permitted to rest on the top of the beams or girders of the floor below, since shrinkage of such members during seasoning will allow the posts to settle and rack the framing of the building.

"The steel or iron post caps are used to support the end of the posts from the floor above and to take the load from the beams or girders of that floor. Such caps may be either of the two-way type as shown in Fig. 10B or of the four-way type as shown in Fig. 10C. The type to use in a given building will depend upon the method of framing used in the roof and floors. In the building which we have designed, a four-way cap will be needed to carry the ends of the girders on one side of the posts, and the ends of the intermediate beams on the other side.

"The ends of the girders and beams at the cap either butt up against the sides of the post from the floor above, or are cut out in such a manner as to fit around the lower end of this upper post and hide it from sight from the floor below.

"Another type of post cap uses an iron pintle or step as shown in Fig. 10D. One end of this pintle rests on the post cap and the upper end extends just above the floor and carries the lower end of the post on this upper floor. The ends of the floor girders are cut out so as to extend around the pintle and hide it from sight.

"The base plates referred to above are generally of steel or iron and are proportioned to distribute the load from the post evenly over a larger area of material having

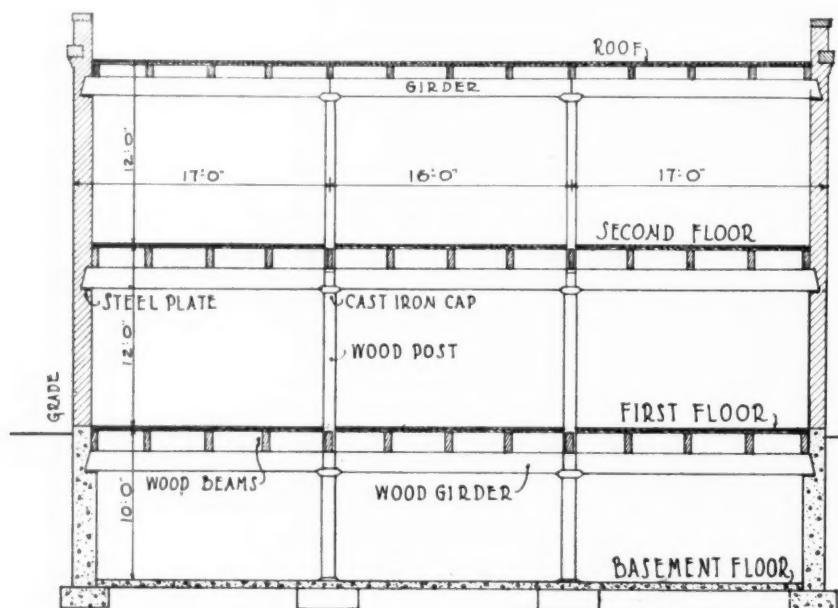


Fig. 10A. Columns from Roof to Basement, Showing Method of Loading and Support.

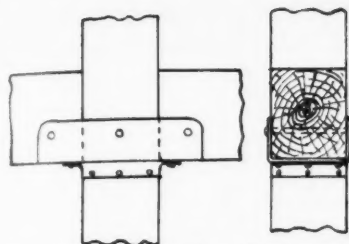


Fig. 10B. A Two-Way Steel Post Cap.

possibly a smaller crushing strength than timber. The plate is also used to obtain an even bearing surface for the wood and to protect it from moisture, likely to be present in concrete or masonry laid upon damp earth. The thickness and size of the plate will depend upon the load to be carried, crushing strength of the material on which the plate rests, and the size of the end of the post. Details in regard to the design of base plates may be found in Kidder's Architects' and Builders' Pocket Book.

"While placing iron or steel plates under the ends of posts helps to keep dampness away from the timber, it is advisable to coat the ends of posts and all other timbers in damp places with some good timber preservative. Coal tar creosote is often used for this purpose and gives satisfactory results.

"Some engineers advise that a 1½-inch diameter hole be bored lengthwise in the center of all posts, and that a ½-inch diameter hole be bored thru the sides of the post near the top and bottom to provide ventilation for this central passage. The general opinion of timber experts seems to be that this central opening does no real good and may, in fact, be a source of real danger from dry rot.

"If we are to build this factory in a city of fair size, it is probable that there will be some kind of a local building ordinance which will specify certain minimum sizes of material to be used in the floors, beams, girders, posts, etc. In the absence of such an ordinance, these minimum sizes do not have to be lived up to, but it may be to the advantage of the owner from an insurance standpoint to do so. In order that you may see what is generally called for by the average city building code and by the National Board of Fire Underwriters when heavy timber, 'mill construction' (sometimes called 'slow burning') factory buildings are to be built, I will give you a list of minimum sizes:

Roof and floor planks, 2½ inches thick.

Beams and girders, not less than 6 inches in any dimension.

Posts and columns, not less than 6 inches in any dimension.

"Some ordinances do not allow beams and girders less than 6 by 12 inches in size, or posts less than 10 by 10 inches. It is generally agreed that timber posts should be square in cross-section and that no post should be longer than thirty times its side dimension. In other words, a post which is 6 inches square should not be more than 15 feet long.

"The timber for posts should be of good quality and free from large knots and other defects. Care

should be taken in choosing a kind of wood which will hold the load to be carried and give good service as to lasting qualities. Oak, yellow pine, and Douglas fir have been used in different parts of the country with good results.

"The load which will be carried by a post or column is that brought to the post cap by the girders or beams which rest upon that cap in addition to any load which may come from a post from the floor or floors above. The framing plan of the building must be used to determine this load. While it is not probable that all of the floors of a building will carry the maximum live load all of the time, the building ordinances of various cities impose regulations as to the amount of this maximum load to be used in post calculations.

"A very conservative recommendation is to allow the full live load at all times when it is more than 120 pounds per square foot, as in the case of factories, shops, warehouses, etc. A common recommendation in the case of other buildings exceeding five stories in height is to use the full amount of the live load on the roof and top floor; for each succeeding lower floor the live load is reduced by 5 per

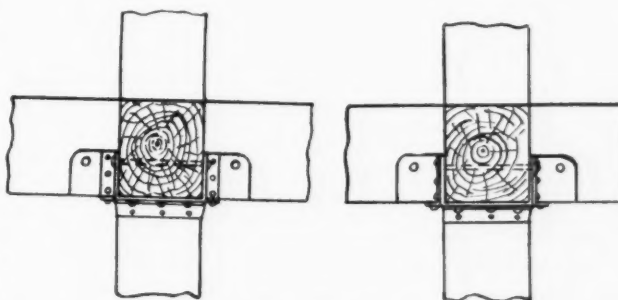


Fig. 10C. A Four-Way Steel Post Cap.

cent until 50 per cent of the live load is reached, then these reduced loads are used for all remaining floors.

"Since our building has only two stories, it is advisable to use the full live load on the roof and floors in our calculations.

"There are many formulas used to determine the size of post to be used to carry a given central load, but the Winslow formula, as used in the building code of Chicago, Ill., gives results which have been found to be satisfactory. The formula is simple and easily handled as will be shown in the calculations which follow.

"The Winslow column formula is given below:

$$C = c \left[1 - \frac{L}{80d} \right]$$

Where C is the unit stress on the column cross-section in pounds per square inch of area and found by dividing the total load on the column by the area of the cross-section in square inches; c is the allowable compressive strength of the timber in a direction

Figuring Timber Posts for Factory

parallel to the grain in pounds per square inch; L is the unsupported length of the column in inches, and d is the diameter or least width of side of column in inches. Values of c may be taken from the following table of working values according to the kind of timber used. These values will be found in the third column of values given in the table.

Working Unit Stresses for Structural Timbers Used in Dry Locations.

Species of Timber.	BENDING. Stress in Extreme Fiber		COMPRESSION. Horizontal Shear Stress		Parallel to Grain "Short Columns"		Perpen- dicular to Grain	
	Lbs. Sq. In.	Lbs. Sq. In.	Lbs. Sq. In.	Lbs. Sq. In.	Lbs. Sq. In.	Lbs. Sq. In.	Lbs. Sq. In.	Lbs. Sq. In.
*Fir, Douglas								
Dense grade	1600	100	1200	350				
Sound grade	1300	85	900	300				
Hemlock, Eastern...	1000	70	700	300				
Hemlock, Western...	1300	75	900	300				
Oak	1400	125	900	400				
Pine, East'n White	900	80	700	250				
Pine, Norway.....	1100	85	800	300				
*Pine, Southern Yellow								
Dense grade.....	1600	125	1200	350				
Sound grade.....	1300	85	900	300				
Spruce	900	70	600	200				
Tamarack	1200	95	900	350				

*NOTE: "The safe working stresses given in this table are for timbers with defects limited according to the sections on defects in the rules of the Southern Pine Association for Select Structural material. 'Dense' southern yellow pine and 'dense' Douglas fir should also conform to the other requirements of this rule. 'Sound' southern yellow pine and 'sound' Douglas fir require no additional qualifications, whereas the other species should, in addition to being graded for defects, have all pieces of exceptionally low density for the species excluded."

"We have explained the method of finding the amount of load carried by each of the intermediate beams and girders in previous talks relating to this

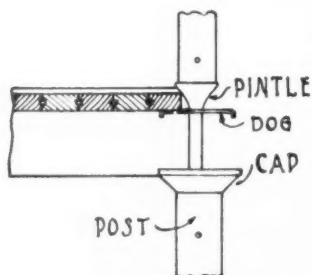


Fig. 10D. Pintle and Post Cap Type of Construction.

particular building. A study of the floor plan showing the framing of the roof and floors will indicate that the columns or posts of the top floor must support one-half of the load on the girders extending each way from the post cap. If we use the same dimensions which we used in finding the loads on the girders, we will find that the loads on the posts of the top floor are just the same in amount as that carried by each of these girders, or 10,880 pounds. This is seen from the fact that each girder carries one-half of its load to each post supporting that girder. This makes the load on the post the same as that on a girder when the spans of the floor are equal on each side of the post. The load of 10,880 pounds which we are using is a little larger on account of a smaller span on the center girder than on the ones nearest the side walls. The same principle is used on the lower posts, except that each lower post carries an additional load due to the post above which rests on the post cap of the one under it.

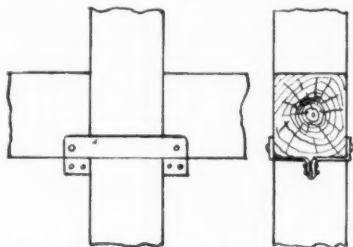


Fig. 10C. Steel Post Cap with Fin.

"Applying the Winslow formula to the posts of the top floor, and using a post of square cross-section as the most economical, we fill in the formula as follows, using 'dense' yellow pine as the material:

$$\frac{10,800}{d^2} = 1,200 \left[1 - \frac{12 \times 12}{80 \times d} \right]$$

$$10,800 = 1,200 d^2 - \frac{1,200 \times 144 \times d}{80}$$

$$10,800 = 1,200 d^2 - 2,160 d$$

Dividing thru by 1,200,

$$9 = d^2 - 1.8 d$$

By trial, we can see that the number 4 will just about satisfy this equation, but since square timbers come in 4 by 4, 6 by 6, 8 by 8, 10 by 10, 12 by 12, 16 by 16 inches, etc., and since each of these timbers when surfaced on all sides is $\frac{1}{2}$ inch less in size, we can see that at least a 6 by 6-inch post would be needed, and possibly an 8 by 8 or 10 by 10-inch, according to the local building ordinance.

"The posts on the first floor carry a load of 10,880 pounds from each post above in addition to a load of 36,720 pounds from the girders of the second floor, making a central load of 47,600 pounds on each post. Applying the Winslow formula again, we have:

$$47,600 = 1,200 d^2 - 2,160 d$$

$$39.6 = d^2 - 1.8 d$$

The number that will satisfy this equation will be between 7 and 8. An 8 by 8 or 10 by 10-inch post will do, but it is advisable to use the 10 by 10-inch size.

"The posts in the basement will likewise carry a load of 47,600 + 36,720 pounds, or, 84,320 pounds. Filling in the formula, we have:

$$84,320 = 1,200 d^2 - 2,160 d$$

$$70.3 = d^2 - 1.8 d$$

The number 10 will satisfy this equation. We should use a 10 by 10 or a 12 by 12-inch post for this location.

"Next time," said the Boss, "we will take up the subject of top or wearing floors, waterproofing, and other details which should be considered in a building of this kind."



Better Find Out First!

IT'S a good thing to be on the alert to please, for we read that by doing so, extra-satisfied customers are made. Still, it isn't safe to go ahead *too* far without consulting the owner. For instance, I once put in the flower boxes under front windows as a surprise to the owner. When she saw it she "went straight up." I had to take them out—for she had already sent to some distant country for some very choice climbing roses for those front windows. But she was very nice about it when she found out my intentions, and said he would be *delighted* if I would put them under her *bedroom* windows.

H. J. BLACKLIDGE.

Architectural Terra Cotta Brick's Twin Sister

By M. P. Duplessis

Advertising Manager Midland Terra Cotta Co.

WHAT is terra cotta? It is baked clay; hard pottery used for statues, architectural decorations, etc.

The oldest known use of terra cotta for building purposes dates back to about twenty-five or thirty centuries ago.

Excavations among historic Egyptian buildings have revealed its use for wall and floor tile, decorative friezes, memorial tablets, legal documents, etc.

Modern Building and Terra Cotta

Skipping over the extensive period covering its development from the pre-Christian era to the present time, we have in the burnt clay products of today possibilities of which the ancients never dreamed.

Scarcely a building is erected nowadays but which contains a burnt clay product in some form or other—brick, floor tile, wall coping, architectural terra cotta, etc.

Until a few years ago most buildings were built almost entirely of wood, but gradually as communities grew together the fire danger with wooden structures increased, until as a measure of protection people began building with fireproof materials—in other words, with the two prominent, fire-resisting, burnt clay products—brick and architectural terra cotta.

Burnt clay is never beset with dry rot, rust or corrosion. One hundred or one thousand years from

today will find well-made burnt clay products in practically the same condition as on the day they were set in the building.

How many times have you stopped to admire a building in your town because of some distinctive charm? Was it the unusual architecture or a unique brickwork design or white enamel terra cotta trim that drew your attention?

Terra Cotta Made to Order or Carried in Stock

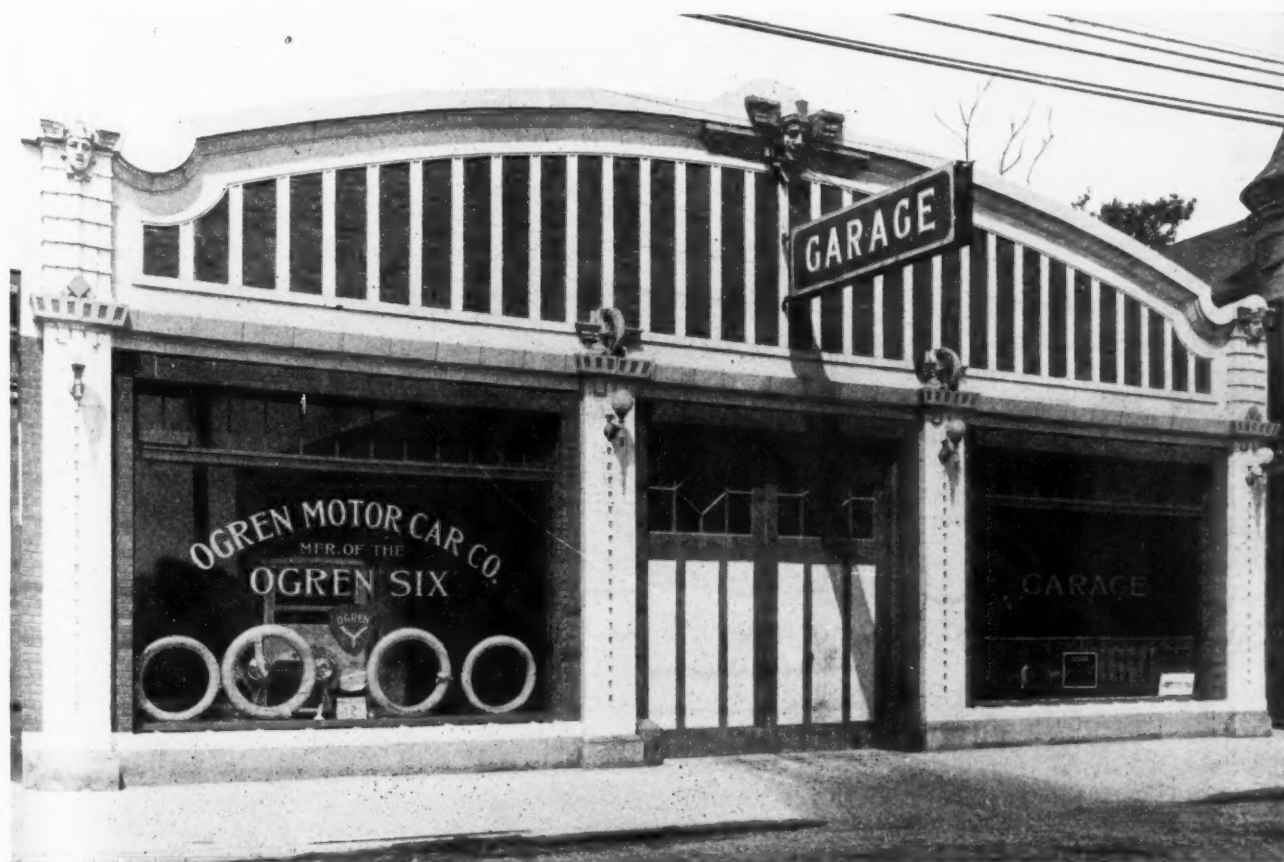
Terra cotta is made to order when the architect or builder wishes to incorporate in his design special forms and color schemes or where the requirements of the building demand that the terra cotta be especially designed to accommodate itself to the steel or other structural or architectural conditions.

Stock terra cotta is a very recent development in the field of burnt clay.

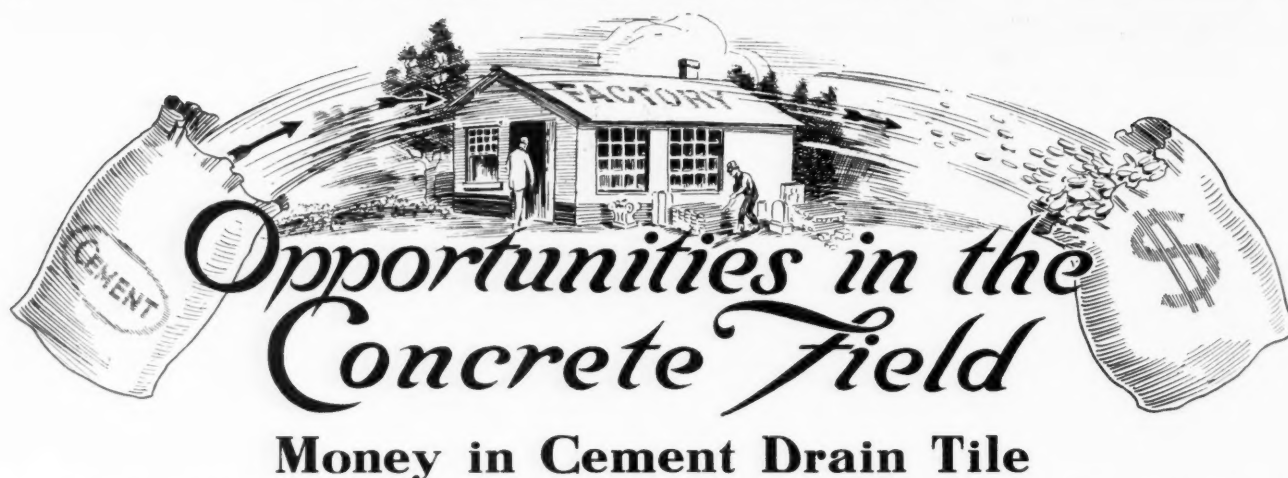
By "stock terra cotta" is meant terra cotta in white enamel finish which is ready for shipment. This material is manufactured in practical easy-to-handle sizes and is designed in various architectural styles to suit individual preference.

In using stock terra cotta a time allowance of from one to three weeks must be made to provide for fitting the various pieces in each feature, to the dimensions on your plan; also for the making of special corners or other features out of the ordinary.

For permanence and attractiveness in homes, stores, theatres, banks, schools, build with brick and terra cotta.
Chicago.



Public Garage and Auto Sales Room of Popular Design. Front is a Combination of Face Brick and White Enamel Terra Cotta in Designs Suggesting the Automobile Business. The Motorist is Attracted to a Good Looking and Clean Looking Building.



AN ILLINOIS CONTRACTOR AND A MINNESOTA PRODUCTS FIRM TELL ABOUT WINTER WORK AND EXTRA PROFITS IN MAKING DRAIN TILE

QUANSTRONG, of Genoa, Ill.—Mr. P. A. Quanstrong—went into Chicago for the annual cement show in February, 1913, for the same reason that thousands of others—contractors, cement products men, and builders in general—blow into the Windy City regularly at least once a year; namely to absorb in one to two weeks enough new ideas and see new wrinkles in equipment to keep them on their toes applying them profitably to their respective businesses for the rest of the year.

Mr. Quanstrong knew the value of these annual gatherings of the biggest and most progressive men in the concrete field. It already had a place in his profit column because he had attended before.

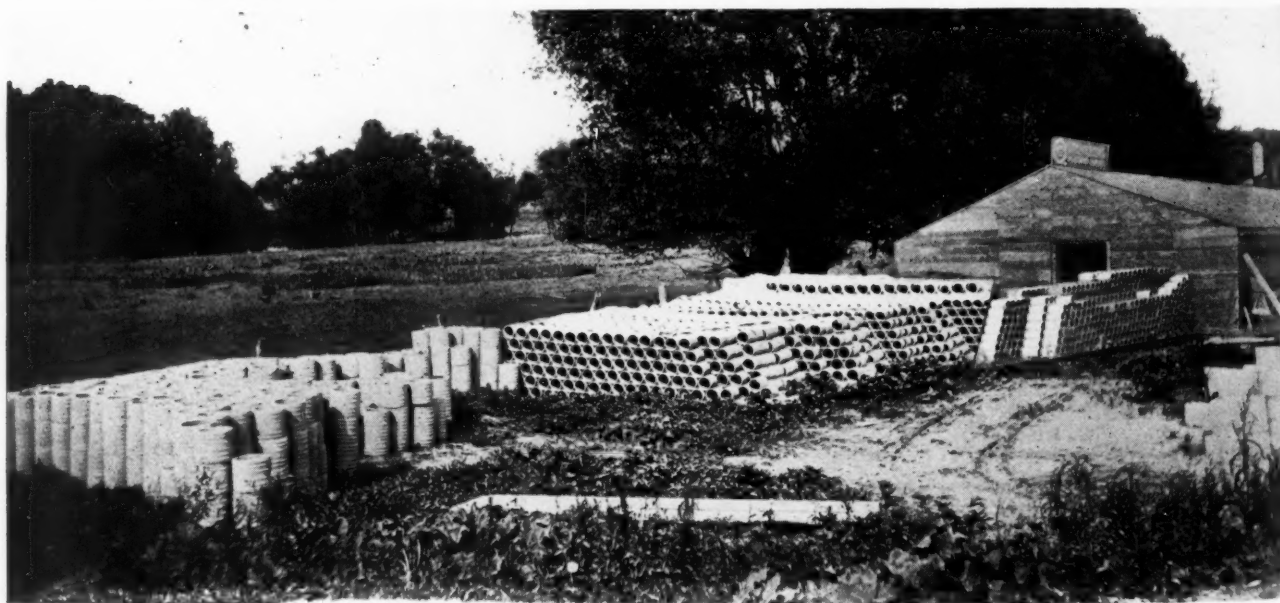
This time he walked down the center aisle of the Coliseum and turned to the right at the far side, thinking to give everything the "once over" first. Then he saw something that gave him his big idea of the show.

Let us follow Mr. Quanstrong's thought back to his own business at Genoa. Among other things, he built concrete silos—and good ones. But he could not do

that during the winter even if he had the business. He had good men, trained to his work. He did not want to lose them, and the expense of paying them for watching the thermometer did not look well on his books. Then—drain tile—why, surely, they were a necessity in his section, as in almost every other farming community. Farmers were buying them now by the carload; but these cement tile—well, let's see.

These and many other thoughts occurred to Mr. Quanstrong as he watched a machine turn out neater and more accurate drain tile than he had ever seen. He asked lots of questions and then went home. First, having satisfied himself of the superiority of cement drain tile, he talked to the farmers and found that there already existed enough demand for tile to make the business pay from the start. Then he found he had a building in his sand pit in which he could operate. Then he jumped a train to see a manufacturer of cement drain tile machines, got some more ideas on making quality A1 tile, and had a machine shipped to him.

He did not have any trouble getting business because



Cement Drain Tile Plant and Storage Yard of P. A. Quanstrong, Genoa, Ill.

some of the farmers hauled tile on bob sleighs, others ordered for early spring delivery. But more, he found he had to have more men to run his plant, even when outside work was pressing. He found the manufacture and sale of cement tile worked hand in hand with his silo business. Often when he built a silo he sold the farmer drain tile, and vice versa.

When he set the prices of his tile, Mr. Quanstrong thought of the clay tile manufacturer with whom he had to compete, but soon forgot about it because he in many ways was established in his section for the superiority of his cement tile.

Before the third winter had set in, after running his tile plant all year he was behind with orders. He doubled the size of his plant, put in a conveyor for material from his pit, an overhead screen and a larger tile machine. His business paid for this; his idea of keeping his men on a profit producing basis during the winter months worked out; and aside from that he has a tile business established delivering more

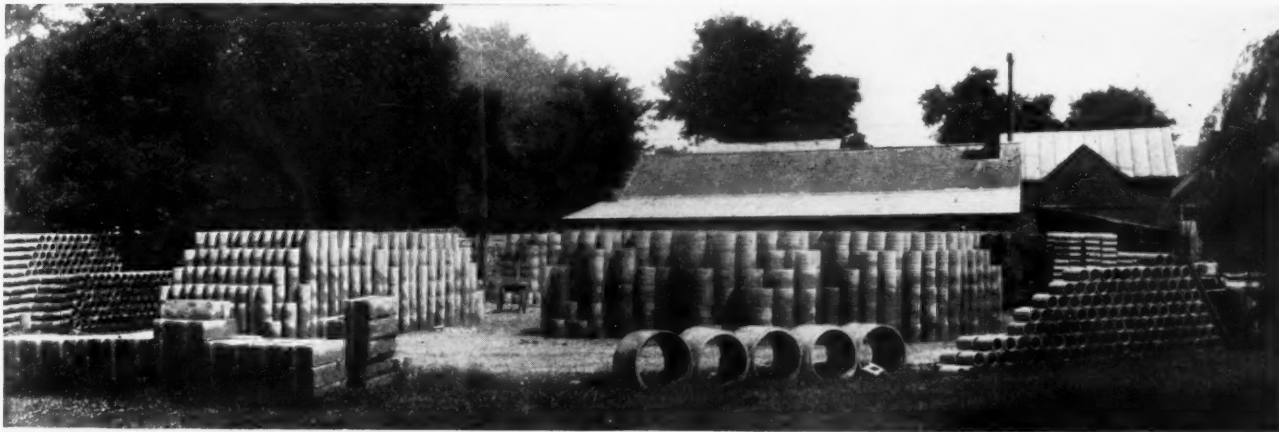


Storage Yard of the Corrinne Concrete Tile Co., Corrinne, Utah.

thousands could not be counted on one hand.

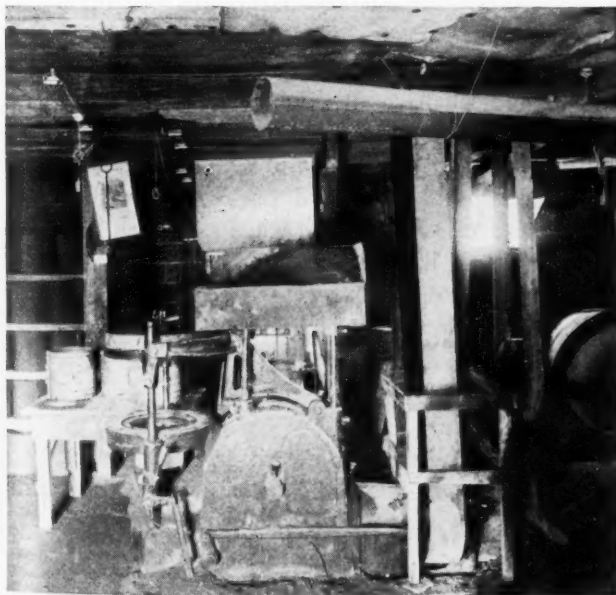
Another Tile Making Experience

Quite similar to the experience of Mr. Quanstrong is that of Carlson Bros., proprietors of the St. Peter Stone Sidewalk Co. of St. Peter, Minn.



General View of Cement Products Plant and Tile Storage Yard of the St. Peter Stone Sidewalk Co., St. Peter, Minn

than any other branch of his business. His return? Well, maybe he will tell you. Last year his profit in



Interior View of the St. Peter Stone Sidewalk Co. Plant, Showing Mixer and Tile Machine.

Up to the winter of 1913 their business was laying sidewalks, foundations for buildings, and general contract and cement products work. They not only saw the possibility in the manufacture of cement tile, producing profit during the ordinarily slow winter months, but also realized that with development of drainage as a necessity to the farmer, the demand for tile would far exceed the supply in their state. That is the condition today.

They had watched a certain tile machine operate at the Cement Show and knew that machine would do its share in making the best quality of tile, so they bought one. Thruout the years 1913 and 1914 their tile machine operated almost continuously and during 1915 they found it necessary to enlarge to meet their demand. For the past year their tile department has operated in full every day except holidays and Sundays.

One does not have to be within one hundred miles of St. Peter, Minn., to know Carlson Bros.' tile and to realize from the quality they are shipping and selling locally the tile business is profitable for them.

"The ancient fallacy that success came by competition has been succeeded by the modern fact that it comes only through co-operation"

—THE MAN FROM THE LUMBER YARD

There is a new business religion abroad in the land. Regardless of the creed of our readers we know that each one who THINKS on this article will accept it.—EDITOR.

THERE is one striking thing about growth, and that is the change of ideas—of ideals.

When I was a youngster the man I most wanted to be was the fellow who climbed poles and strung up telephone wires. When I got older I decided I would as soon let that job out to some one else. Within the last decade it has been proven that pulling a tooth is a better remedy for rheumatism than soaking your feet in hot mustard water.

I pity the man who is so "sot" he wouldn't change his mind. It is unfortunate to be of a vacillating turn, to never "stay put"; but more so to have the ego to the extent that it is impossible for anyone else to have an idea worth considering.

Destruction vs. Construction

The old school of business taught that if you would increase your business you must "ASSASSINATE your competitor" so as to acquire his business. The new religion of business is "ASSOCIATE with your competitor, and those of like interests, to increase the business of all."

The ancient fallacy that success comes by competition has been succeeded by the modern fact that it comes only thro co-operation.

My work brings me in touch with the man whose hands are grimy from handling nails and bolts; with the man whose clothes smell of wood and are spotted with lime; with the man whose glow of health shows that he breathes God's pure air in His sunshine; and with the man whose brow shows the strain of worry over uncollected accounts with the Saturday night payroll to be met.



Old Grin May Not Understand Ethics, but He Knows Reciprocity.

Fine fellows, every one an American prince. Each one is entitled to the good things due every worthy man under the stars and stripes. Is he getting them?

Why Butt In?

Some dealers have made money because of the advance of cost of stock in their shelves. BUT they do not know how permanent that cost is or what shrinkage they may have to stand later.

The man who has used the saw has received better wage, BUT his wife has spent more with the grocer and shoe man, and the net result is no better.

The contractor may have figured that there would be considerable margin of profit, BUT that which should have been a plus quantity has been evaporated by the heavy advances of cost of each screw and nail used not to mention the doubling of price of every piece of bronze used until a yawning cavity of loss is faced.

There are so many BUTS to be taken into account. It is because of these BUTS that I BUTT in.

In the first place, is the ultimate consumer, meaning in this case the owner, benefited by a loss sustained by the man of materials, or workman, or contractor?

The Merit of Adequate Compensation

These people are not philanthropists nor are they vassals of the man who builds. It is not expected that work be done without adequate compensation.

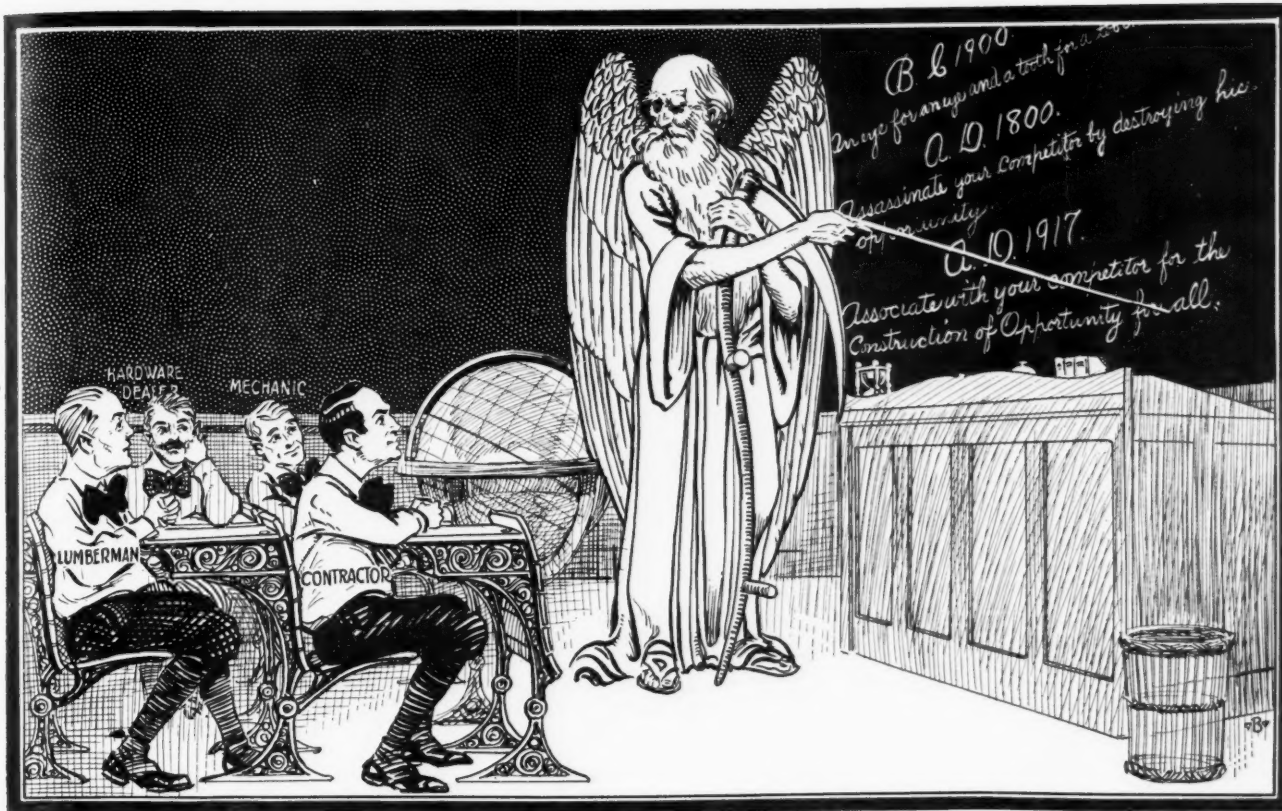
Regardless of what any other law would say, the law of human nature dictates that by some hook or crook every one figures to get out whole on his part of the job when competition has been fierce.

With this in mind, always known but never admitted, it is not necessary to ask the man who was able to secure an unheard of low figure if it paid to squeeze on the tinning when \$5.00 added in the flashing would have saved \$50.00 of repair. Nor need you ask the man whose out side escutcheons were red with rust before his apartments were rented if it paid to get so low a figure on his builder's hardware as to have bronzed in place of bronze escutcheons foisted on him.

Nor does the man or merchant who has to skimp, to get out by the skin of his teeth, enjoy it or profit by it.

What Does It Get You?

In looking for the cause of much of this trouble which happily is becoming less each day, I find that it



Father Time is an expensive teacher if we don't keep up with the times. His pupils, the Hardware Dealer, the Lumberman, the Mechanic and the Contractor should learn the lesson of 1917.

is largely because of the inherent, probably inherited, spirit of fight.

We read in the papers of one of the most successful aviators on the Western European battle fields who gave his rule of success as being "get the other fellow first." But in the latter part of October another fellow came along that was quicker than he was.

From the time that I wore knee pants until very recently I have heard nothing but "I can underbid." "I will do it cheaper." "I will get the business if there isn't a penny in it." "I will get his hide if it's the last thing I do."

Brother! Stop-Look-Listen! What does it get you to get the other fellow's hide?

Even "Old Grin" has more sense than to do that. This often comes about because of ignorance.

The Ignorance of One Injures All

A good friend of mine who now has a prosperous contracting business in a thriving county seat on the New York Central lines asked me some time ago if I knew of a desirable location. He wanted to move because he couldn't make any money where he was. I was surprised because I knew he owned his materials right and understood the building business.

I found that a new man with considerable money and the ambition to OWN the building trade of that section had come in.

He figured his actual costs of estimated materials to which he added the actual cost of estimated labor to

which he added \$100.00 for his profit and salary. He let it be known that any contractor who would charge over \$100.00 profit on a job was a robber. Of course every one who had a job to let agreed with him.

The need of this man was to know the cost of doing business and how to figure costs. Nor was the community hurt because these two men came to their senses before it was too late—before they had failed in business and incurred unpayable debts.

The buyer is being rapidly educated to see the advantage of paying a fair price and securing a job well done.

No community can be built on bankruptcy.

The butcher can't make any money from selling the lumberman who figures so close that his profit is wiped out. Nor can the material dealer increase his wealth in supplying a builder who gives his profit away.

The Millenium is Coming

The sooner every member of a community learns that each is dependent on the other, and all are held up by that great keystone CO-OPERATION, the sooner we approach the ideal.

The world has been moving. There is more of the give and take among all classes of business men than there ever has been before.

Not only because it pays but because of the golden rule is more consideration being shown.

I venture the opinion that it will not be many months before the BUILDERS CLUB idea will be working

The Man from the Lumber Yard

successfully in hundreds of towns. Many say: "It never will be done—it can't be done."

When I hear that I always think of old man Wilkerson. He lived some thirty miles from the town where my father's lumber yard was located. It was known that he had never seen the "steam cars." One day his sons brought him into town. He arrived as the Chicago Flyer was unloading and loading its human cargo. He looked the train over and said: "Boys, they'll never start her." Just then, with a groan that was almost human, the train got into motion and rushed down the valley. The old man watched the disappearing train, and turning to his sons said: "Boys, they'll never stop her."

One reason I have for my strong belief in the ultimate getting together of the people interested in the building field is because of the type of men to be found there.

Why a Hardware Dealer?

For instance, why are **HARDWARE DEALERS** as a class different from druggists, bankers, etc.?

The great majority of these men are in the vocations they follow because they drifted there ten, twenty

Pine Knots

Having considerations for the prosperity and perquisites of the other fellow does not detract from your own.

It is not what your attitude ought to be toward your neighbor, but what it is.

Every day presents opportunities for cementing friendly relationship with competitors as well as customers.

Give the other fellow credit for being as right intentioned as you are.

Think good of your competitors. That begets good and makes good business.

Competitor "Getting" competitor can never make good feeling.

Until we have good feeling, we can't make business good.

Making an enemy of competition is as long way round as traveling west to arrive east.

Until business is made good, we can't have good business.

The ultimate consumer is the ultimate sufferer from trade war.

Are you strong? Use your strength to help another.

Are you weak, join with others that all may be strong.

One poor figurer can injure an entire trade.

There can be no co-operation without confidence. Confidence is like a postage stamp. It can't get any where unless it is clean.

Tomorrow will never arrive. If you would make friends, do it today.

Tolerance is the only thing necessary to unite men in closer bonds of human brotherhood.

*Be it resolved that whereas throwing sand in the gears does not help business; during 1917, we will keep the machinery well oiled by **FRATERNALISM**.*

or forty years ago. The neat dainty lad did not drift into the dirty rough business of hardware. The rugged, broad gauge, substantial boys naturally drifted into a work and a business that gave them scope for expansion. It is rare that you find a narrow-minded, constipated sort of fellow in any branch of the building field. In all lines of manufacturing there are organizations, also in all lines of jobbing. I fear the day is distant when the apothecary and shoe man, the clothier and furniture dealer will get together; but I see an early fraternalism of the boys in the building business.

In no work or movement can man take more than one step at a time. If you want to take a first step toward a Builder's Club and don't know how, write me.

Yours truly,

THE MAN FROM THE
LUMBER YARD.

✦ Poor Stand of Alfalfa

A veteran, talking to his great grandson, a little lad of eight or nine years, remarked: "Nearly a generation and a half ago my head was grazed by a bullet at the battle of Chickamauga."

The little boy looked at the old man's head thoughtfully, and said: "There isn't much grazing there now, is there?"



During the Winter Months Plan Your Building Improvements and Study Into All the New Things You Will Need to Use.

A Handsome Church Edifice

THE half-tone photo below with main floor plan, is that of the First Congregational Church, recently completed at Burwell, Neb., after plans prepared by A. W. Woods, architect, of Lincoln, Neb.

It is of brick construction, faced with round-edge, red paving brick, laid in brown mortar and with trimming stone of white cement.

The dimensions are 42x70 feet, with full basement, well arranged for the social work of the church.

The auditorium floor is bowl shaped and seated with circular pews. The lecture room is in the rear part of the church, a part of which can be converted into three class rooms by means of curtains hung on rods near the ceiling.

There is a gallery over the lecture room that will accommodate about one hundred people.

The main entrance is in the tower and leads to the

basement auditorium and lecture room. There is also a grade entrance on the side at the rear that leads to the basement and parlor, which is at grade, under the organ and choir loft. There is also a rear entrance that leads to the pastor's room and choir loft.

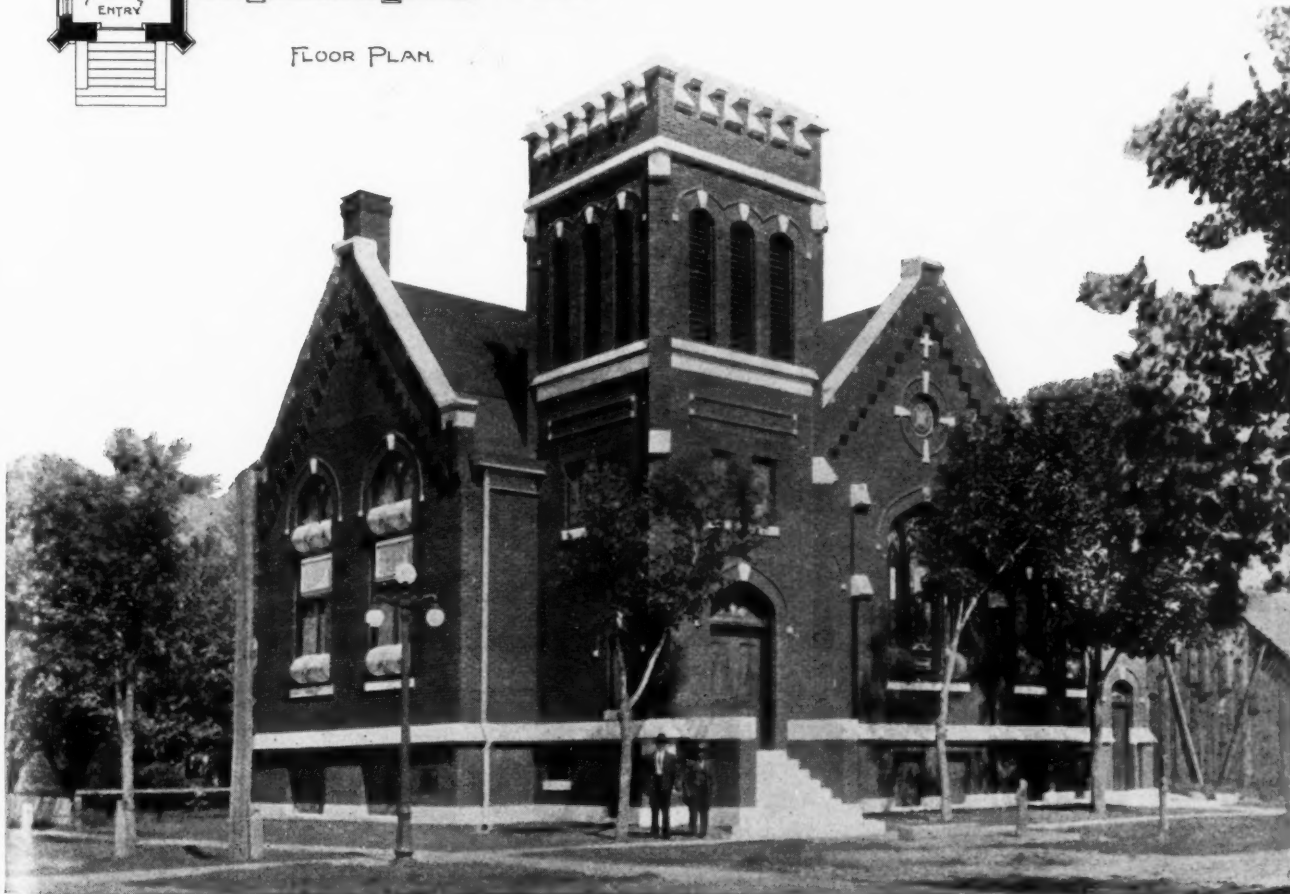
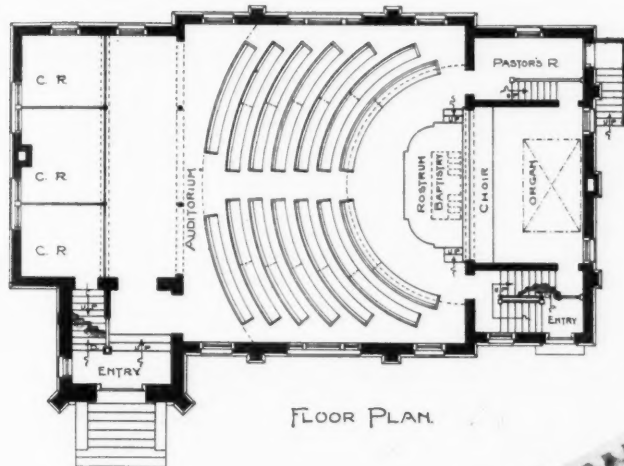
The exterior has a very artistic appearance and the people of Burwell may well feel proud of their church.

The cost ready for use, we are told, was in the neighborhood of fifteen thousand dollars.



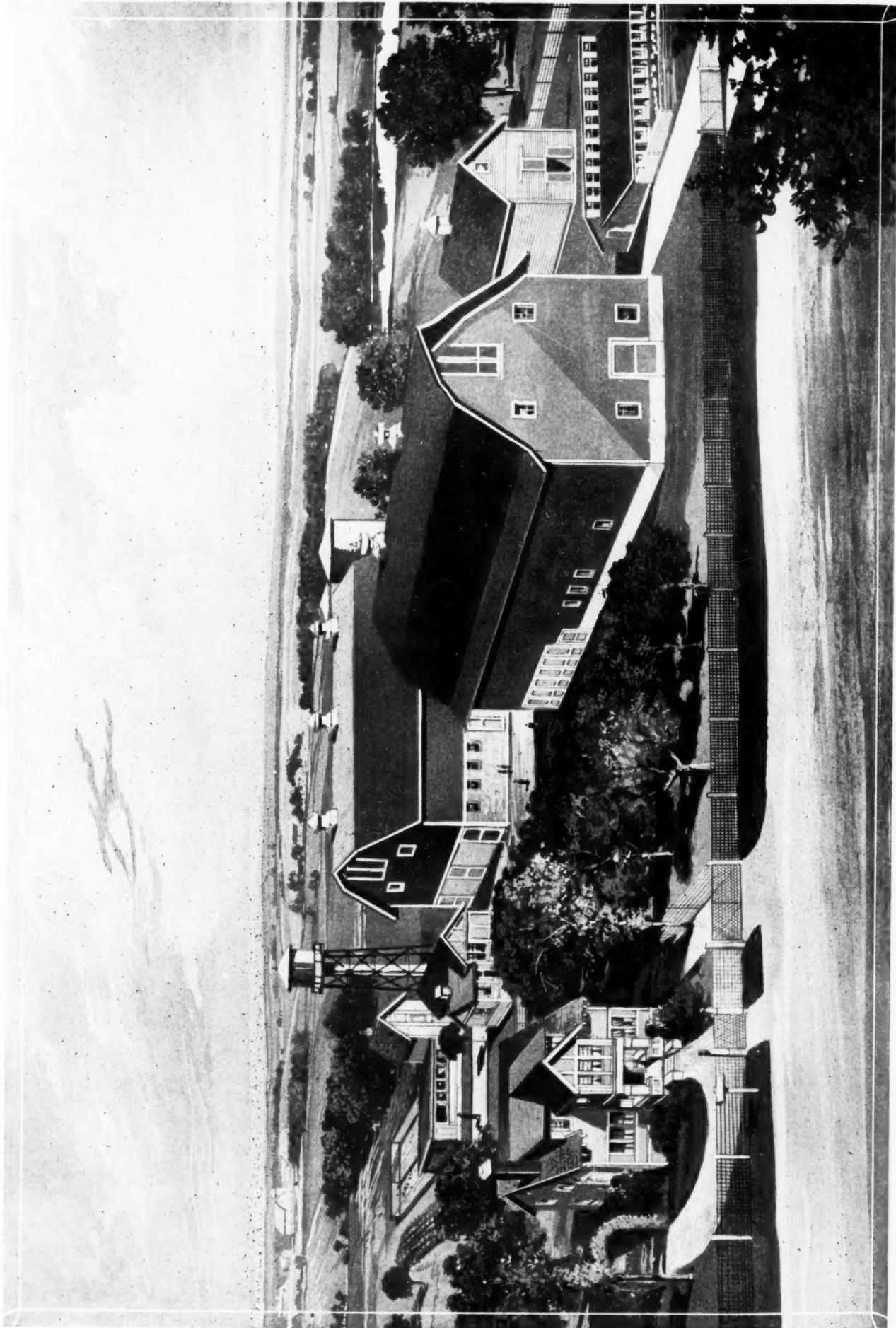
Lumber in Department Stores

A new turn has been taken in the retail lumber business by the selling of short lengths of lumber by department stores for odd jobs. The movement has spread all over the country and even the retailers are taking it upon their own account, by providing cabinets containing odd lengths from which the man who wishes to buy 5 cents worth of board to make a shelf can get what he wants. It remained, however, for New Orleans to develop the idea of merchandising still further, by making a window display of the "short lengths for odd jobs" stock, and the display window in the biggest store in the city attracted great attention. The idea was introduced in this country by R. E. Simmons of Oshkosh, who brought it from South America while investigating markets for the United States Department of Commerce.



Photograph and Floor Plan of Handsome Brick Church, Recently Completed at Burwell, Nebr.—the First Congregational Church, A. W. Woods, Lincoln, Nebr., Architect.

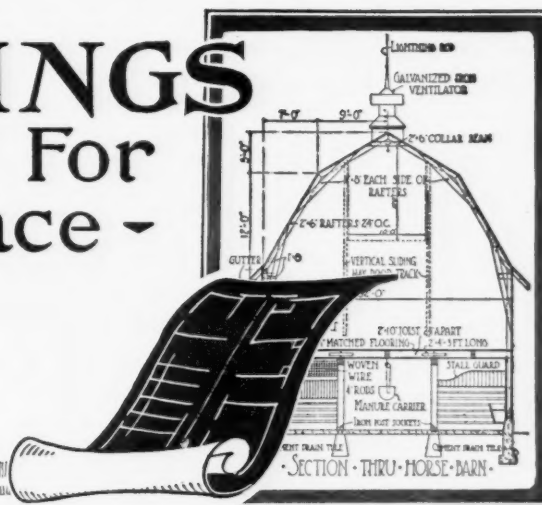
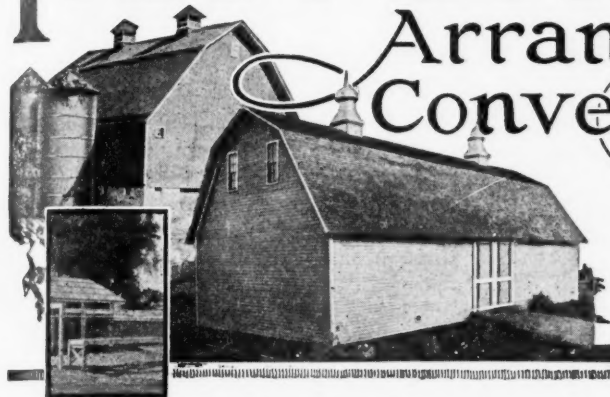
Farm Buildings Designed in Group



General View of Farm Buildings Planned in a Compact Group to Save Space. The Combined Horse Barn and Implement Storage, Design No. A380, Occupies the Foreground. Just Back of It, at Right Angles, is the Dairy Barn, Design No. A381. On the Extreme Right is the Winter Hog House, a Saw-Tooth Roof Building, Design No. A239. Just Back of the Hog House is the Two-Story Corner Rib and Granary, Design No. A382. For Description and Floor Plans of Each of These Buildings, See Pages 85 and 86.

FARM BUILDINGS

Arranged For Convenience -



Builder-Farmer Co-operation in Farm Improvement

THE COUNTRY BUILDER PLAYS AN IMPORTANT PART IN MODERN FARM IMPROVEMENT

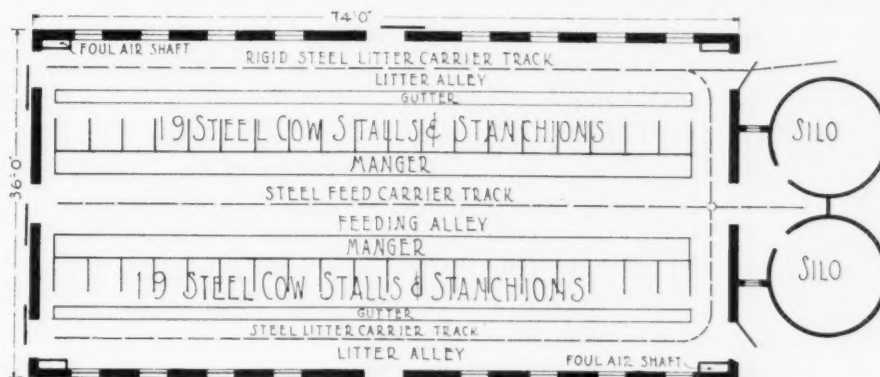
THE most progressive farmers are spending a considerable amount of time in planning for the future. The arrangement of the group of farm buildings is not carried out in a hap-hazard manner, but it is the product of careful planning based upon what the farmer knows to be the most convenient arrangement. The farmer knows where his buildings should be placed but he must rely upon the contractor and builder to advise him as to the best type of construction and the approximate cost of his improvements.

The country builder should be truly the farmer's "right hand man" in all matters of improvement and he should be ready at all times to furnish the information which the farmer needs. The builder should influence the farmer to use the modern types of farm building construction, which will furnish the maximum strength from 2-inch lumber used in stock sizes. The design of each building should be drawn up with the idea of furnishing it with modern barn equipment. In case the farmer is not ready to make the installation of this equipment at the time of building, it is safe to assume that he will at some time realize the benefits which may be obtained by its use, and the building must be ready for its installation when that time comes.

There has been a great deal of earnest work carried on during recent years to improve methods of farming and the buildings and equipment used on the farm. The result of this work is found in the modern sanitary dairy, the use of silos, the better housing of live stock, the use of labor-saving farm building equipment and continual improvement of methods of sowing and harvesting crops. This work is not confined to the larger farms,

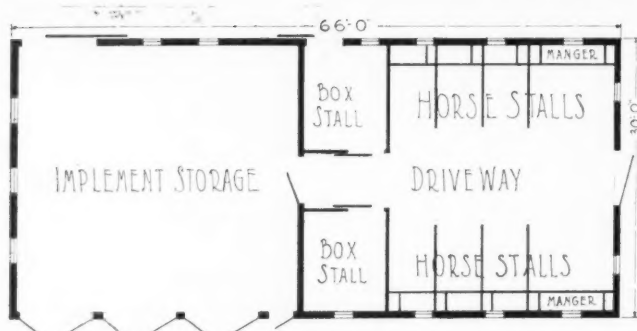
but it is going on generally thruout the country.

The farmer of to-day is rapidly adopting the many new ideas which modern invention and progress have placed at his disposal. Recent years have seen a steady development in farm building architecture. Better materials used in a more logical way is the tendency which farm building has wisely taken. Monolithic concrete foundation walls and floors are replacing less substantial construction. Wooden sills are protected from moisture by carrying the foundation walls up above grade. Studs, columns and other timbers butting on the concrete substructure are held absolutely in place by metal sockets embedded in the concrete. Most important, from a structural standpoint, the heavy post and beam construction has been replaced largely by the plank frame construction, which furnishes large mow space unobstructed by cross members and braces, together with greatly increased strength with much lighter lumber used in the framing. Incidentally, this type of construction saves the farmer a considerable amount in the cost of labor and material. One man who builds a large number of barns every season thruout the North Central States has found that barns built according to the specifications for Radford's Standardized Plank Frame Construction—a consolidation of the most important features



Floor Plan of Dairy Barn, Design No. A381, Illustrated on Opposite Page. We Can Furnish Complete Set of Blueprinted Plans and Typewritten Specifications of this Building for Only \$8.00.

Farm Buildings Designed in Group



Floor Plan of Combined Horse Barn and Implement Storage, Design No. A380, Illustrated on Page 84. We Can Furnish Complete Set of Blueprinted Working Plans and Typewritten Specifications for only \$6.00.

in all types of plank frame construction—have been constructed at a saving of from 20 to 25 percent over those built after the heavy timber plan.

The interior arrangement of barns is given a great deal more thought than was formerly considered necessary. Modern barn design calls for an arrangement which will provide for the use of the many devices intended to reduce labor and improve the living conditions of live stock. Alleys must be laid out along the front and back of the stalls in which feed and litter carriers may be installed. The feed carrier track must be connected with the feed room, which, in turn, is fitted with chutes to the silos and mow. The doors at the ends of the litter alleys must be built so that the track may be carried out to the spreader or manure pile. Doors are fitted with improved hangers which keep out birds and mice and are adjustable to take up settling, do not rust out, stick or run off the track. The dairy barn is fitted with steel stalls which utilize all space, are easy to keep clean and have the strength which will keep them in service over a long period. The stanchions are light yet strong, and hold the cow in place, either while standing or lying down, without cramping or other discomfort. Improved mangers and individual water buckets also contribute to the comfort of the cattle. Developments in ventilation and lighting have done a great deal to improve farm structures, especially those in which live stock is housed.

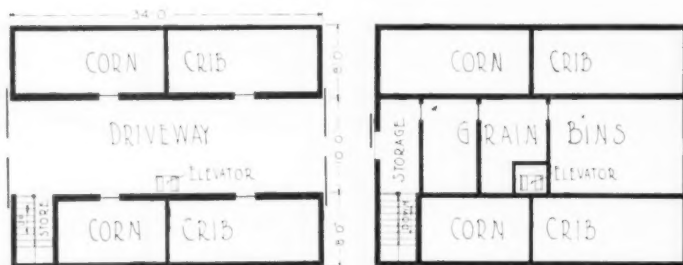
The dairy barn, design A 381, is a building 36 feet by 74 feet, which is constructed with a concrete foundation and floor, the side walls being carried up high with concrete. Plank frame construction is used and the dimensions are based upon the proper space for

stalls. A width of 36 feet with any desired length is the generally recognized standard for dairy barns. This width provides two rows of stalls and leaves plenty of room for the feed and litter alleys. There is plenty of light admitted thru many windows and three metal ventilators secure a thoro circulation of air. Four foul air shafts guide the air from the stable to the two outside ventilators. The center ventilator handles the air in the hay mow.

On the average sized farm it is often possible to combine two buildings into one which will satisfactorily serve the purpose. One of the best combinations is that of the horse barn and implement shed. The barn, design A 380, in the center foreground is such a structure. The foundation walls, 30 feet by 66 feet, are of concrete and the floor is of concrete except in the horse stalls where a wood block floor is placed on top. Three sets of double doors are used on one side of the implement storage space. There should be a good sized work bench in this part of the building. Here, again, the necessity of plenty of light and air is taken care of by plenty of windows and large ventilators.

The corn crib and granary, design A 382, is arranged with two floors. The building is 26 feet by 34 feet. On the ground floor there are two cornercribs on each side of the central driveway. The second floor contains four cornercribs and three grain bins. A well is provided near the center of the building for the installation of the elevator. The hog house is Design No. 239. This design is a government recommended sawtooth-roof winter hog house with windows set in along the sawtooth-roof so as to light and warm the furthest corners of the inside. The dimensions are 48 feet by 24 feet and the interior is divided into sixteen 6-foot by 9-foot pens.

Every country builder is acquainted with the construction of such buildings as are shown in this group. The builder's problem is, then, to have his knowledge of farm building construction ready for the use of the farmer. Practically all farmers demand a thoro knowledge of what they are getting before they go into any improvement work. The builder may help himself by having farm building books, catalogs and representative plans gathered together in his office ready to show to the farmer. He should keep in close touch with progressive farmers and invite them into his office to talk over possible improvements; take his books and plans to the farmer, if necessary, and make it known that he is ready to co-operate in every way when the time for improvement comes.



First and Second Floor Plans of Cornerrib and Granary, Design No. A382, Illustrated on Page 84.

Impressive High School Building

THE small city or town which has a high school building such as the one shown here will certainly benefit by the investment. The man with a family to educate considers the apparent development of the educational system in a town very seriously before he decides to locate there.

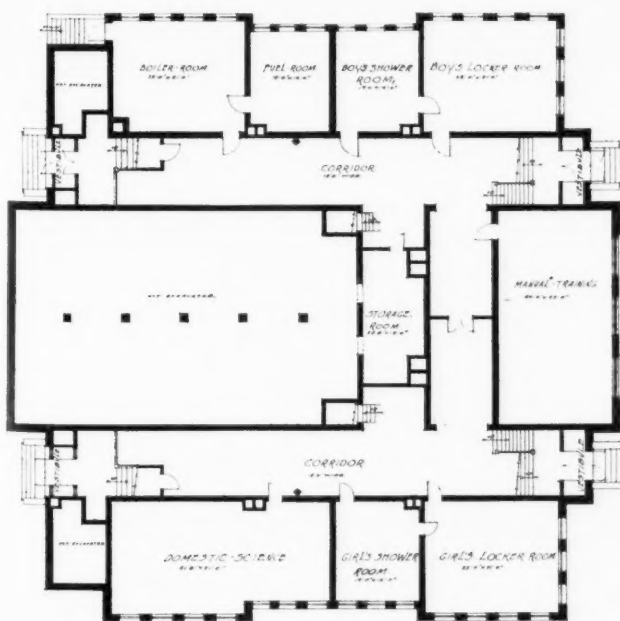
The building illustrated is substantially constructed of brick with terra cotta trim and is designed to include the features which are needed to adequately fit it for any activities carried on in connection with educational work. The necessity for physical development is recognized as an important part of the modern school system, and an adequate gymnasium must be

provided for this work. In the building shown here an added facility is provided by placing a stage at one end of the gymnasium. This feature is important in connection with literary society work and at the time of commencement exercises.

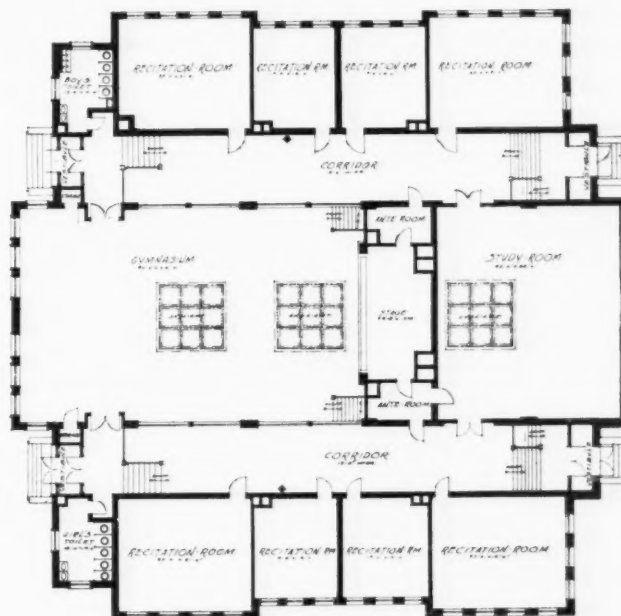
Vocational training is provided for by a manual training room on the ground floor. A domestic science room is furnished for training the girls in the application of household science. This floor also contains the locker and shower rooms, which are used in connection with the gymnasium, and the boiler and fuel rooms. On the second floor there are eight recitation rooms and a study room. Large corridors are provided to prevent congestion during the mid-class period. Doors are placed at each end of the corridors.



Substantial and Well Arranged High School Building at Capron, Illinois, Designed by Ashby, Ashby & Schulz, Architects, Chicago.



Ground Floor Plan of Above High School.



Main Floor Plan Showing Large Gymnasium.



EASY LESSONS IN STAIR BUILDING

Hand Railing Explained



How to Construct a Scroll Wreath Over Two Combined Quadrants

Lesson 6

By Morris Williams

HAVING shown in the last lesson how to draw a handrail scroll and to lay out a wreath rail over one of its constituent quadrants, we will now show how to proceed to accomplish the construction of a scroll wreath over two combined quadrants.

In Fig. 32 is shown a plan of the scroll and a few steps, four of the latter being contained within the scroll curve.

To draw the face moulds for the wreath rails over the two quadrants A-C and C-E, it will be necessary to develop the tangents for the purpose of obtaining their correct pitch and length. To do this, proceed as shown in Fig. 33.

The plan of this figure is a reproduction of the two quadrants A-C—C-E in Fig. 32.

From A measure to A', the height of 4 risers. Place the pitch board at A', and continue the pitch as shown to B' and Z.

Revolve the plan tangents to the ground line as

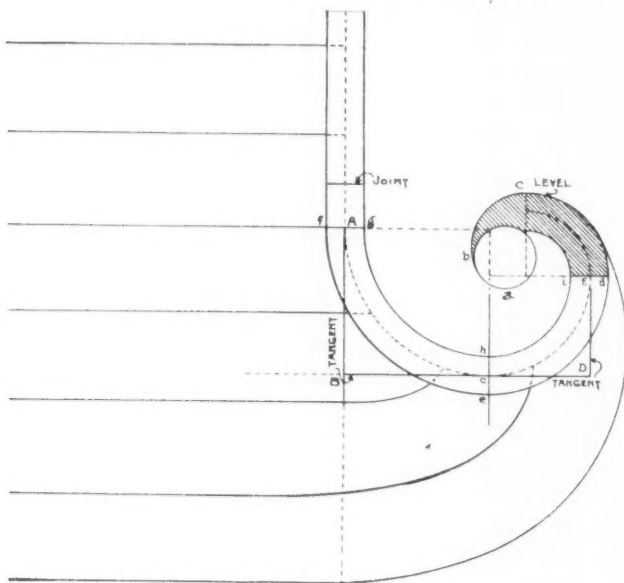


FIG. 32.

Plan of the Scroll and Few Steps.

shown at C', D' and E'. Draw a line from B' to D' and the line XY across through C". In this manner we have found the length and pitch of all the tangents. The tangents A'-B' and B'-C" will be those over the plan tangents A-B—B-C, and the tangents C"-D' and D'-E' over the plan tangents C-D - D-E, the two sets being those required for the face moulds of the two sections of the wreath. Observe that the top tangent A'-B' has the same pitch as that of the rail adjoining, an arrangement absolutely necessary wherever possible, due to the joint shown at M' having to be made square to the tangent so as to butt square with the square cut end of the flight rail.

Observe also that the two tangents B'-C" and C"-D' are equally inclined, which is also a matter of absolute necessity owing to the joint at C" having to be made square to each one.

The bottom tangent D'-E' is level for the reason that the joint at E' connects with the level bottom part of the scroll shown shaded in Fig. 32 from E to the eye. We are now as far as the tangents are concerned in position to lay out the face moulds and will do so by the Ordinate Method as in previous lessons. We will first take up the face mould for the bottom wreath over the plan quadrant C-E.

Its tangents will be the level tangent E'-D' and the pitch tangent D'-C", shown in Fig. 33, and because one of them is level, the angle between the two upon the mould will be a right angle, just as it is shown to be between their two plan tangents C-D and D-E.

Knowing this much, we need but to draw the square designated by the lines E'-D', D'-C", C"-5 and 5-E, shown in Fig. 34, to have the tangents of the face mould in their right position to square the joints which is the only use made of them upon the face mould. The line E'-D' equals in length the level tangent E'-D', shown in Fig. 33, and the line D'-C" equals the length of the pitch tangent D'-C", shown in the same figure.

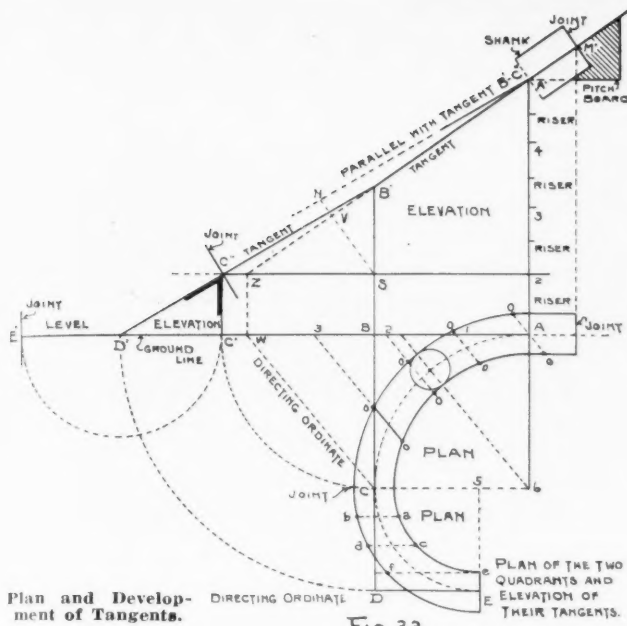


FIG. 33.

Make the width of the mould at the end C" equal the width of the plan rail, and at the end E one-fourth of an inch wider, the extra width being necessary due to the wreath at this end having to be twisted, as shown by the bevel. Now draw the line e-f parallel with the level tangent as shown, and divide the space between it and the end C" upon the other tangent in 3 equal divisions, thru each of which draw the ordinates as shown. Upon these find the points a, b, c, d, etc., measuring from the tangent line D'-C" distances equal to those shown across the plan in Fig. 33, and trace the curves either by free hand or by means of a flexible lath. The twisting bevel is shown at C" in Fig. 33 to be the angle made between the tangent C"-D' and a perpendicular line and is to be applied to the wreath material directed as shown in Fig. 38 towards the inside. Its nature has been fully

explained in Figs. 27 and 29 in the last lesson. The face mould over the top quadrant A-C is shown in Fig. 35 to have been laid out by the same method, as follows: The top line M'-A'-B'-V-Z is reproduced from Fig. 33, as there shown, extending from the top joint M. to Z upon the line XY.

To find the angle between the two tangents, draw a perpendicular line as shown from point V and from B' make the line B'-C" equal in length to the tangent B'-C", shown in Fig. 33. Draw the joint at C' square to the tangent B'-C", and at M' square to the tangent B'-A'.

The "Directing Ordinate" will be found by simply connecting Z-C' as shown. By drawing parallel lines to the tangents to intersect in 5, and an ordinate thru 5 drawn square to the minor will determine ordinate will be the minor axis; and another line through 5 drawn square to the minor will determine the direction of the major axis.

Draw the other ordinates shown at equal distances from 1, 2, 3 parallel to the directing ordinate and upon each measure from 1, 2, 3 distances to o, o, o, etc., equal to the distances across the plan rail shown in Fig. 33 from the points 1, 2, 3 to o, o, o, etc., there shown. Through the points thus determined, trace the curves of the mould.

For this wreath we need two bevels due to the tangents as shown in Fig. 33 having different pitch.

They are shown in Fig. 36 to have been determined as follows: The base line S-B is made equal to the plan tangent C-B and the heights S-V-N equal to the line S-V-N, shown in Fig. 33 drawn from S square to the pitch line A'-B'-Z. Bevel V belongs to the joint M' of the wreath and bevel N to the bottom joint C'.

The way they are applied is shown in Fig. 35, at M' directed towards the outside of the wreath, and at C' towards the inside.

In Fig. 37, the wreath is shown after it is twisted.

Note that its center is kept through its whole length in the center of the plank and that the twisting starts at each end, gradually lessening in the direction of the minor axis, where the wreath and plank coincide.



Berry Bushes Killing White Pine

Goodbye currant jelly! Farewell gooseberry pie!

The bad habits of the bushes on which the berries grow bid fair to drive these tart but succulent confections from the American table.

New England, Wisconsin, Minnesota, and last of all, Montana, have declared war upon the current bush and the gooseberry because of the manner in which these bushes are playing host to a devastating disease which threatens, if not checked, to drive the white pine off the American continent. And to save America's famous trees, the agricultural departments of a dozen or more states have declared that the current and gooseberry bushes must be destroyed.

The white pine blister rust is a tree disease inherited from Europe which can not be transmitted from one tree to another, but which must be transmitted from a tree to one of these two berry bushes, and from that back to another tree.

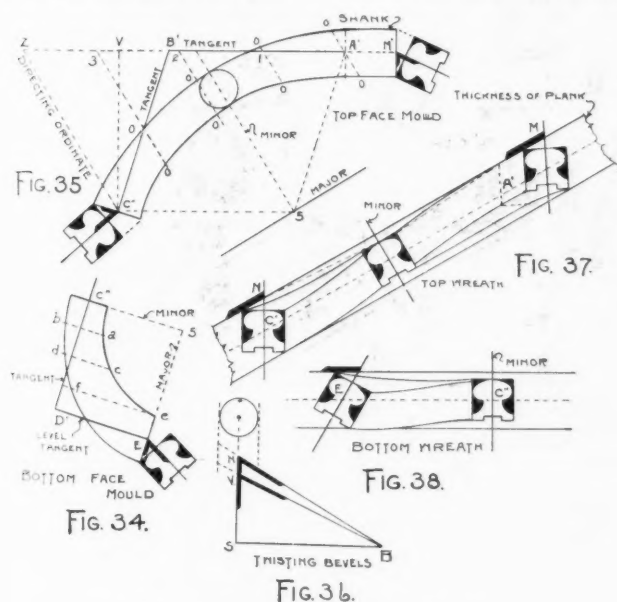


Fig. 34. Mould for the Bottom Quadrant.
Fig. 35. Mould for the Top Quadrant.
Fig. 36. The Bevels for Fig. 35.
Fig. 37. The Top Wreath After it is Twisted.
Fig. 38. Bottom Wreath After it is Twisted.

CORRESPONDENCE



Questions Answered and Ideas Exchanged.

Our Readers are Requested and Urged to Make Free Use of These Columns for the Discussion of all Questions of Interest to Carpenters and Builders

A Good Looking Shop

To the Editor:

Paragould, Ark.

Regarding the picture of my shop, machinery consists of the following: A planer, jointer, rip-saw, band saw, mortiser and moulder—all motor driven.

I make a specialty of all kinds of cabinet work, and for winter work I work up short scraps and strips laid away thru the summer, into blind stops, screen stock and parting strips, screen binding and other moulding material that would be otherwise wasted. I usually put in the winter months in cutting up material for window frames, screens, ice boxes and anything I could make up out of scraps and short pieces.

My motto is "a dollar's worth for every dollar invested" for I find that a satisfied customer is the best advertisement I can have.

A. W. FLIGOR.

Contractor and Builder.



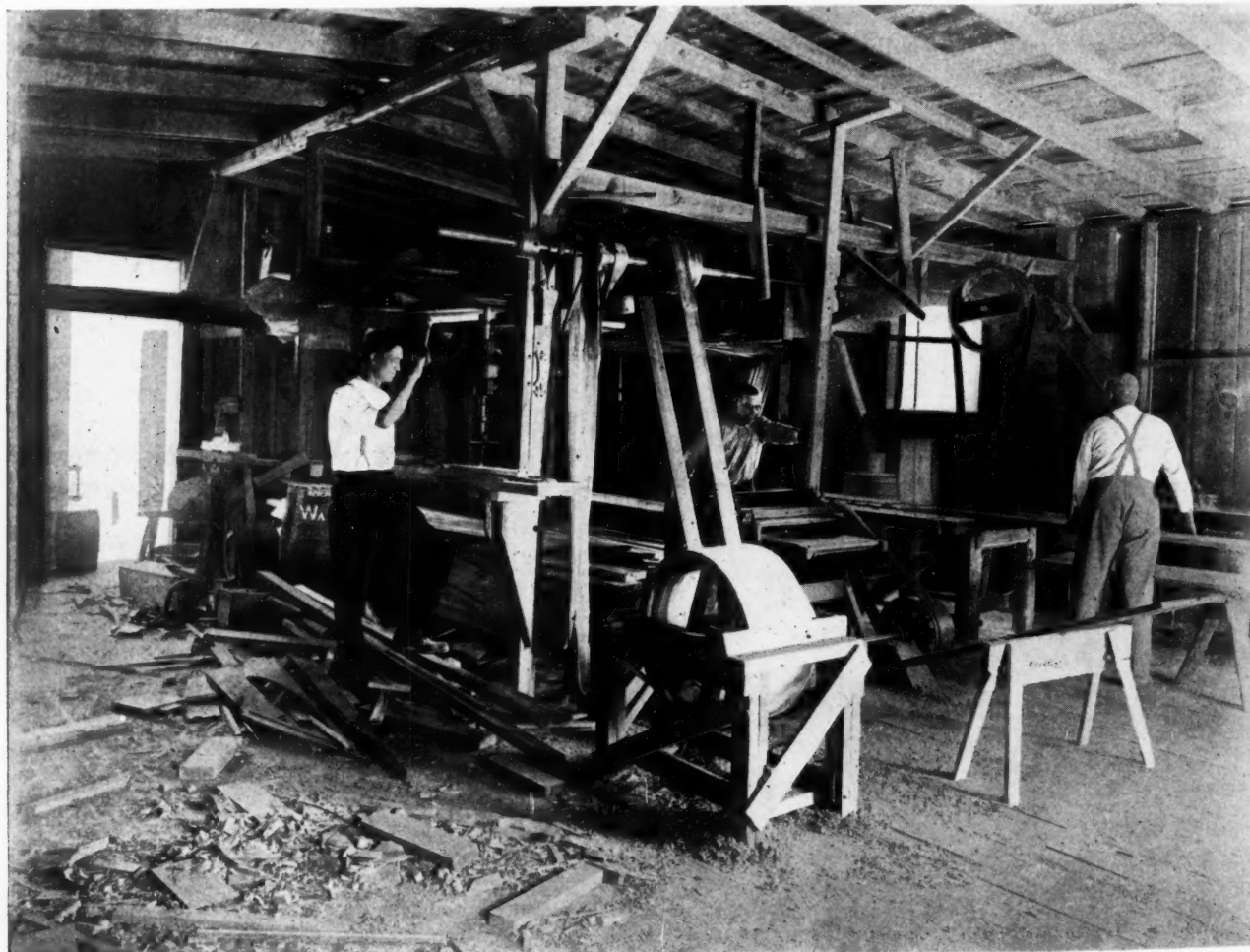
Good Home Planned and Built by Wm. S. Baggs

To the Editor:

Minong, Wis.

Here are blue prints and photo of a farm residence I erected last year.

Now first of all you will wonder at the price of this building. But I will say that practically all of the rough material was gotten out by and with the advantages of the



The Shop in Which A. W. Fligor Spends the Winter Months Turning Scraps Into Window Frames, Screens, Ice Boxes and Such Like.

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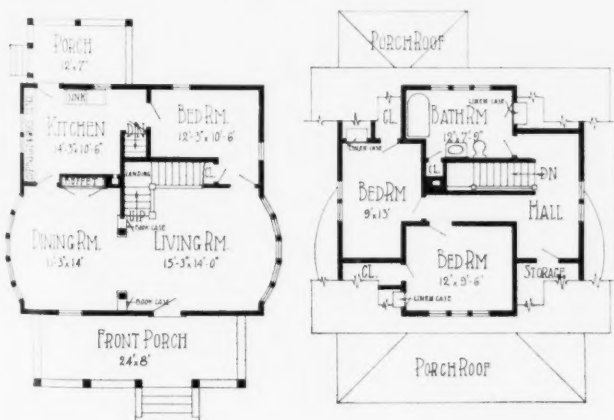


Perspective View of Farm House Built by W. S. Baggs at Minong, Wis., for \$1,566.36.

mills we have up in this wooded country. It is what cut the cost of material.

The entire residence is built as the plans call for, and you will see by the exterior that it is of bungalow pattern all the way thru. All cornice was worked out by myself, cornice being $2\frac{1}{2}$ ft. wide, and run the same as the photo shows. All interior is finished in hardwood, the downstairs being in oak and the upstairs all in birch. All interior trim was made by myself, and worked out on craftsman lines. Modern conveniences with all built in features are included. Bay windows have a full seat across the entire span.

All porches are to be inclosed with screen, and the back one to be used as a dining porch in the summer months. Basement is four feet smaller than the outside wall, basement being of concrete, and exterior wall being of cobblestone, and between the basement wall and the exterior wall there being a curtain wall leaving a dead air space so as to make it cool in summer and warm in the winter time, as it is a cold climate here in the winter time. First floor is of maple, and finished natural, and second one finished with fir floor—closets in all bedrooms. All cap trim is on a line and at



First and Second Floor Plans of Farm House Shown Above.

any time could be continuous. Walls are plastered with two coat work, the last being a fine sand finish, and tinted with flat wall finish.

Total cost of material, \$885.76. Total cost of labor, \$680.60.

WILLIAM S. BAGGS,
Carpenter and Builder of Modern Homes.

Wants to Build Concrete Garage

To the Editor:

Alexandria, Nebr.

Would like information on reinforced garage 60 by 140 feet.

If some of the boys would send in plans and pictures of some such jobs, I think there would be a lot of the builders interested, for nearly every small town will have to have something of the sort.

Would like to know more about metal frames, sash, wire glass and steel roof trusses. I am sure going to watch your ads. for garage fixtures.

LEVI LANDKAMER,
Contractor and Builder.

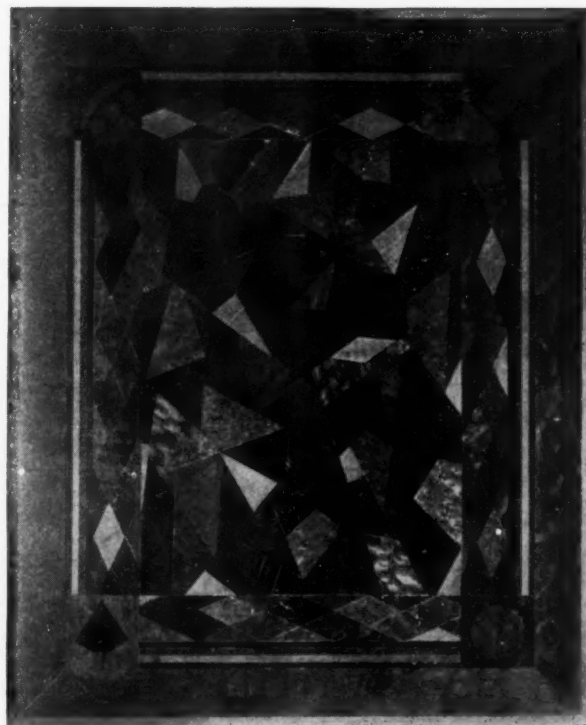


An Inlaid Table Top

To the Editor:

Sodus, N. Y.

This unique table top has in it over forty varieties of wood and is composed of over two hundred separate pieces. It was built by Rev. A. W. Battey, of Weedsport, N. Y., while engaged in cabinet work for a piano factory at Auburn, N. Y. In the mosaic are many pieces of rare wood, some of them being native to the Philippine Islands. The table was con-



A Mosaic Table Top in Which Over 40 Varieties of Wood Have Been Used in Over 200 Separate Pieces.

structed during spare moments at the factory and two years passed from the time the job was started before it was finished

ALVAH H. PULVER.



A Disappearing Attic Stairs

To the Editor:

Penn Yan, N. Y.

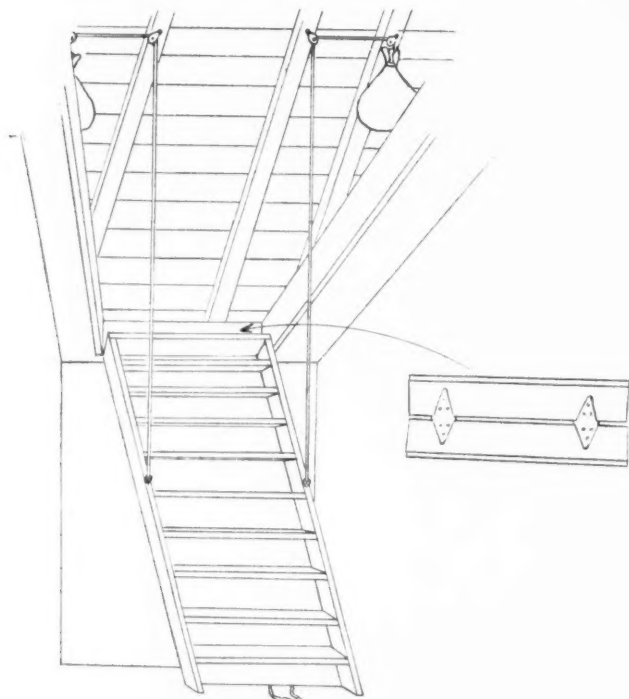
The placing of the attic stairs in modern house construction is often a vexatious problem. In a small house, where every inch of space is valuable, the owner cannot help begrudging the room taken up by this seldom used, yet indispensable, means of ascent. The accompanying figure shows how the difficulty has been met by an ingenious country builder. His invention bids fair to do for the small householder what the folding bed has done for the dweller in the city flat.

The disappearing staircase is easily installed. It should be made enough longer than the perpendicular distance from

the ceiling to the floor to give the flight the desired angle. A fairly steep pitch will be found desirable as a rule, because the steeper the pitch, the less space and material required. The upper end of the stairs is fastened to the facing of the well-hole by two stout strap hinges, as shown in the cut. The general effect will prove neater when the stairs are up, if the hinges are sunk in the boards.

The flight is held in position when raised by means of two ropes, one fastened to a hook on each side and passing up into the attic thru two pulleys, attached to the rafters and ending in a weight on either side. The sum of the two weights should equal approximately the weight of the stairs as it swings down on the hinges. Any form of weights may be used, but those used by the builder, because they were at once inexpensive and right at hand, was bags filled with sand. This kind of weight has the added advantage of being easily adjusted to that of the stairs. When properly constructed the staircase will remain in any position, such as half way up. A rope handle is attached to the free end of the stair for the purpose of pulling it down. It may be pushed back up with a pole, or a vigorous shove will send it into position. Care must be taken to have the weights hang clear; if a trunk or any other object should be placed so that either weight rests upon it, it will be impossible, when the stair is raised, to close it completely.

The lower side of the flight should be closed up with light lath, or any other ceiling material, and then finished off in the same manner as the hall in which it is located. If the



Showing Method of Attaching Supporting Ropes to Rafters of Gable Roof.

ceiling, or paper, whichever is used, is carefully matched to that of the hall, the stairs when raised will escape the notice of all but an unusually keen observer.

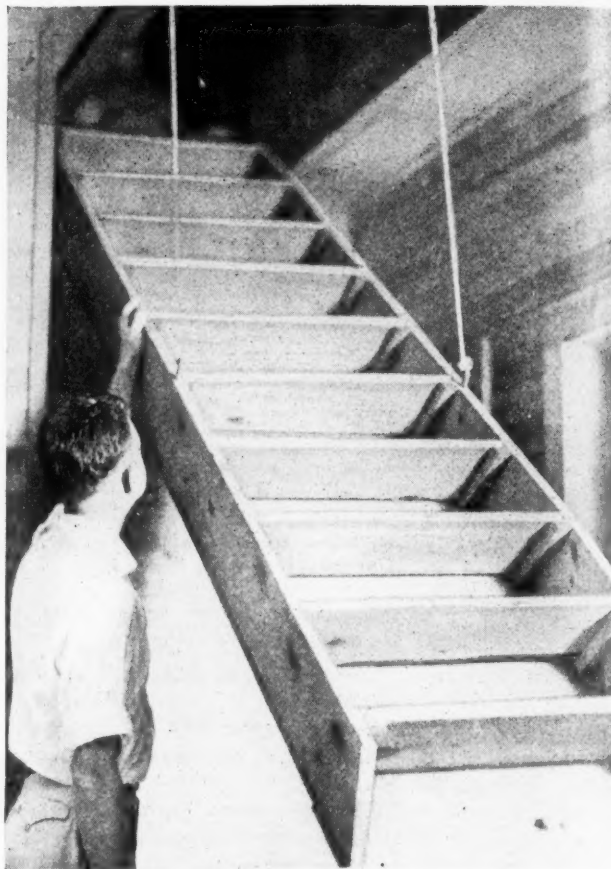
HERMAN ELLIS NICHOLS.



Dealer Carries Varied Stock for Contractors

Editor AMERICAN CARPENTER AND BUILDER: Newark, N. J.

I am interested in advancing the good work of bringing together into a closer understanding the carpenter contractor and the retail lumber dealer. One is dependent upon the other



This Photograph Shows the Appearance of the Finished Stair.

in many ways if they wish to succeed. The contractor is the natural customer of the yard dealer. It is impossible for the contractor to carry an assorted stock and the dealer is supposed to do so in order to meet his wants. It is unfair for the manufacturer or wholesaler to favor one contractor against another and it is equally unfair for the manufacturer or wholesaler to compete with the retail yard dealer for the trade of his natural customers. It is the duty of the yard dealer to protect the contractor from such competition. The closer the contractor and dealer can get together and co-operate the better for both.

NEW JERSEY LUMBERMEN'S ASSOCIATION,

James M. Reilly, Secretary.



Wants Sliding Window Detail

To the Editor:

Dublin, Ind.

I would like for some of the other readers of THE AMERICAN CARPENTER AND BUILDER to send in a drawing as to the best methods of making a sliding window frame. I have made them two different ways and either way is not satisfactory, as it leaves a place on the sill to hold water. If any one knows any way to overcome this, I would like to have their ideas about it.

A. E. S.



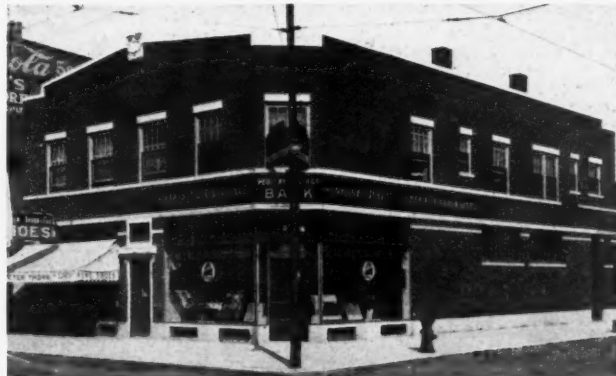
Every One Better Pleased

Roswell, N. M.

Editor AMERICAN CARPENTER AND BUILDER:

Replying to your favor of the 18th, we heartily congratulate you on your efforts to build up more cordial relations between the contractors and the dealers. It is only by mutual co-operation between dealers and contractors that the best

(Continued to page 96.)



LOGICAL TRIM
for brick buildings

MIDLAND

WHITE ENAMEL

TERRA COTTA

Portfolio of ideas---free

1515 Lumber Exchange
Chicago, Illinois



WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

MODERN STORE FRONTS

Their Design and Construction



By
Francis J. Plym, President
of KAWNEER MFG. CO., NILES MICH.



IN 17 PARTS, PART 11. (SEE FEBRUARY, MARCH, APRIL, MAY, JUNE, JULY, AUGUST, SEPTEMBER, OCTOBER AND NOVEMBER ISSUES FOR OTHER DETAILS.)

NOTE: Mr. Plym desires this Department to be of greatest practical benefit to contractors and builders. He will gladly answer letters of inquiry, giving any special store front information desired. He has also prepared a booklet on modern store front sections which he will mail free of charge to any architect, contractor or builder desiring a copy. Ask for Catalog H. Under this heading is appearing a series of typical store front designs, also a series of plates, of half size details of Kawneer store front construction.



TYPE No 52

TYPICAL ELEVATION OF MENS WEAR STORE

COPYRIGHTED BY
KAWNEER MFG. CO.

O H, I thought this was Edward's store! That is an expression which every merchant hears time and time again, and why? Because every store looks like every other store. But here is a little gem of a haberdashery store that is different.

First of all, it is designed to sell haberdashery. Second, it is different from the standpoint of appearance. The bronze signs on the piers will lend just that touch of distinctiveness so sought after by wide-awake merchants. The design in the transom glass, too, will tend to prevent one's mistaking this store for a drug store or a jewelry store. It

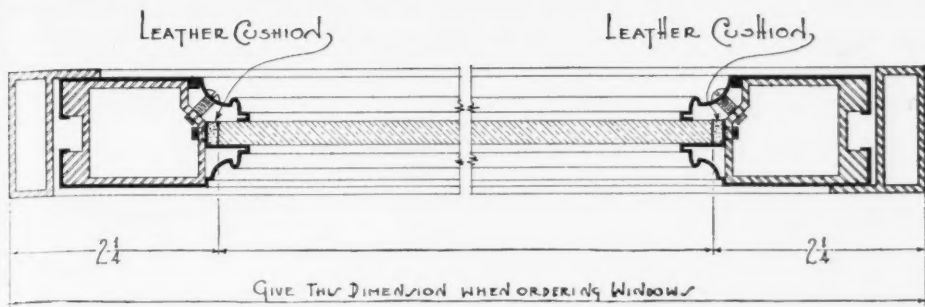
is stores of this sort that will give you a reputation that will bring you business, for they represent thought, and attention to detail, which every Tom, Dick and Harry is not capable of.

The Kawneer Manufacturing Company will show "up-to-date" KAWNEER STORE FRONT designs for various other types of business, such as Grocery, Millinery, Haberdasher, Candy, etc.

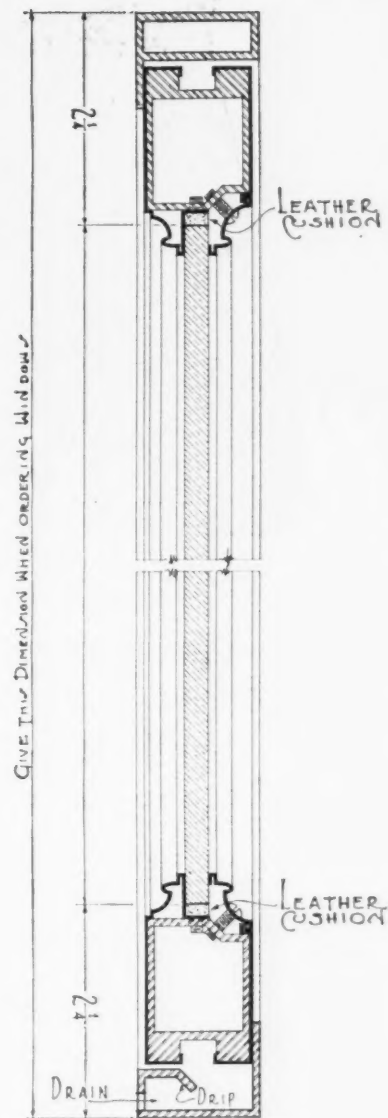
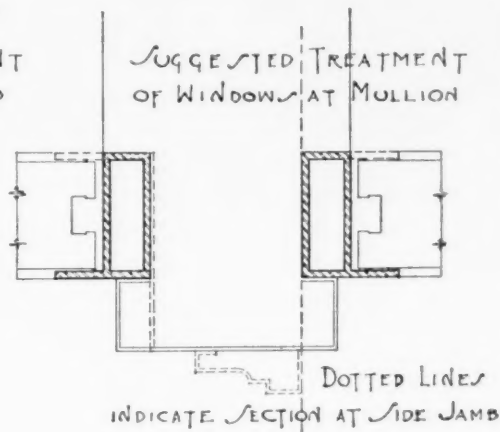
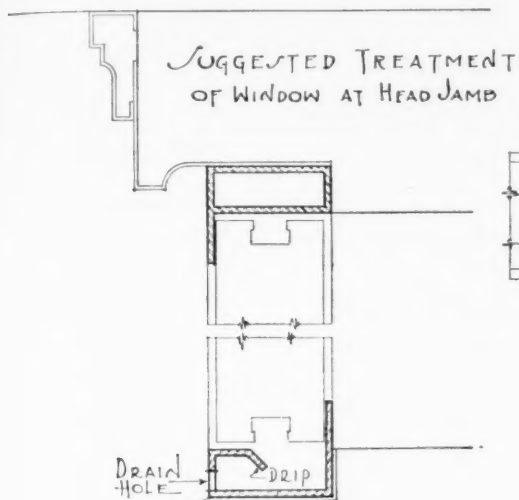
The details on the opposite page, drawn half full size, show some of the members which constitute KAWNEER STORE FRONTS. Readers are asked to cut these out, as they will prove to be a valuable reference asset to them in the future.

NOTE -
THE
WINDOW
REF.
DESIGN
FOR
SIZE
OVER 2
SQUARE
FEET

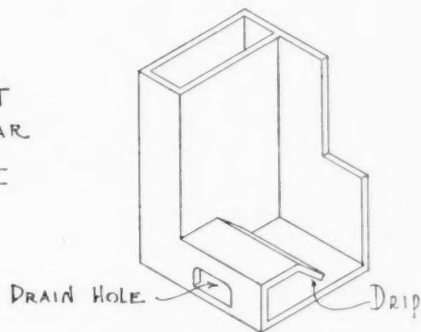
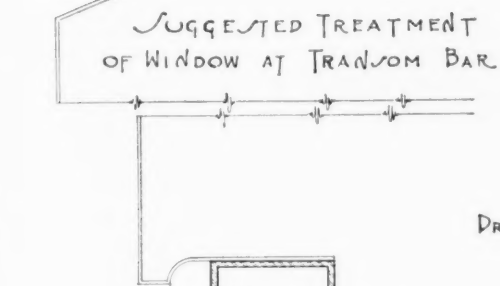
PLATE



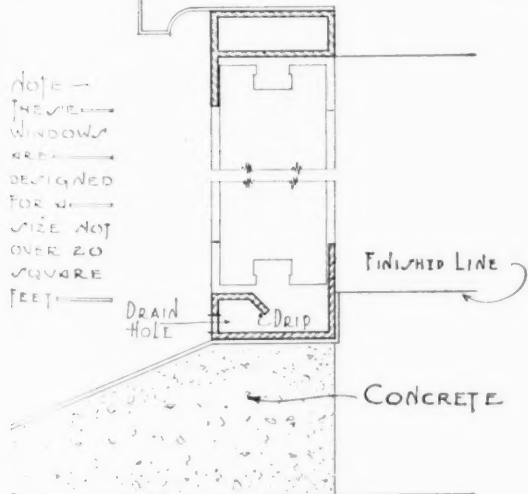
HORIZONTAL SECTION. P-50-B-PIVOTED WINDOW



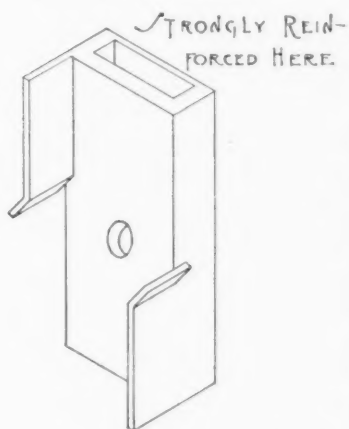
VERTICAL SECTION P-50-B-PIVOTED WINDOW



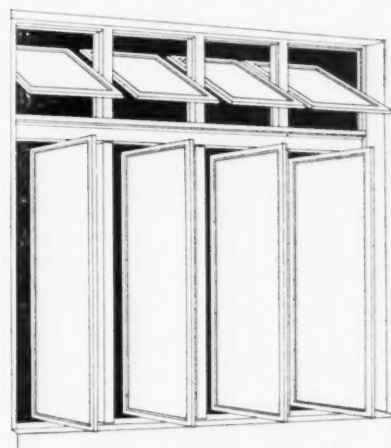
DETAIL OF WATER-PROOFING FEATURE



SUGGESTED TREATMENT OF WINDOW AT SILL



DETAIL OF WINDOW FRAME AT PIVOT



SKETCH SHOWING OPENING FITTED WITH KAWNEER P-50-B-METAL PIV. WINDOW

PLATE NO. 12



KAWNEER MFG. CO. — NILES, MICH.
MANUFACTURERS OF KAWNEER PATENTED STORE FRONT CONSTRUCTION.



Kawneer
STORE FRONTS



This Advertising Builds New Business—for YOU

It's the Johns-Manville way of doing it. We'll come into your territory, search out and develop new business, and send it all your way.

Three million readers in a score of big national magazines—many prospective home-builders in your own town—are learning the facts about

JOHNS-MANVILLE TRANSITE Asbestos Shingles

Here's a roofing that's both safe and sightly—that can't burn, rust, warp or rot. Moderate in cost, requires no painting, and is supplied in a variety of distinctive shapes, sizes and colors. Examined, approved and labeled by the Underwriters' Laboratories, Inc., and when laid "American method," given Class "A" rating—the highest rating possible. Is it any wonder that home-builders are interested?

J-M dealers everywhere are making two profits—one on the sale and one on the laying. And now is the time for YOU, too. This is your opportunity to build bigger and better business in the easiest and most profitable way.

Start the New Year right. Just ask for the full details of our dealer proposition. Open to any reputable builder or supply house—but write promptly.

H. W. Johns-Manville Co.

EXECUTIVE OFFICES:
296 Madison Avenue, New York

Branches in all large cities

results can be obtained for the community, and this mutual co-operation means much in "Good-Will," friendship, and results to both; and better houses for the community. The contractors will secure better service and in many cases better material, and should have assurances of strong team work in developing more business.

We find that when the retail dealer and contractors work together that the individual builder is much better pleased with service and the results obtained.

We congratulate you on the stand that you have taken in building up "Good-Will" and using your influence for a fair and square deal to contractor, retail dealer, and the individual builder. We are more than glad to co-operate in this movement.

KEMP LUMBER COMPANY,
By Robt. H. Kemp,
Vice-President.



No Chance of Losing This Man

To the Editor:

Girard, Kans.

I am mighty glad to be numbered with your large and ever growing family of readers, and will continue so as long



A Church Built Under the Supervision of Mr. D. Kennedy.

as I am able to drive enough nails to earn my subscription fee.

Enclosed please find picture of church built in 1915, I being foreman on this job.

D. KENNEDY.



How do You Stretch Screens Sideways?

To the Editor:

Sterling, Ill.

I read in the correspondence department of different ways of stretching wire cloth on window screens. I would like to ask how they stretch the screen sideways? That is the hardest way for me, as the screen we get here is short on the outside, causing it to sag in the middle.

I would also like to know if it would pay me to purchase a cement block machine and make my own blocks. Blocks sell here for about 12 cents apiece, delivered. I mean blocks 8 by 8 by 16, which are sometimes hard to get.

S. P. MORRIS, Building Contractor.



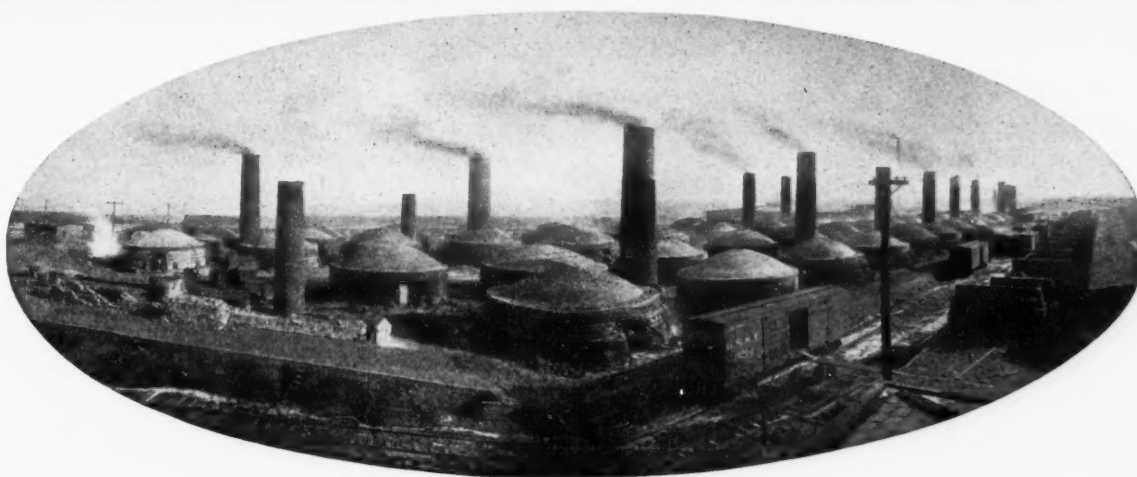
Wants to Refinish Curly Maple

To the Editor:

South Berwick.

I have an old desk made of curly maple which I would like to refinish and would like to ask the subscribers of the best way to do the work. Of course, I would have to scrape and get it to a smooth surface before I began to finish, but would like to know the best way to finish after the smoothing was done.

GEO. H. BUTLER



One Hundred Million a Year!

100,000,000 well burnt pieces of clay. Yes! That's our annual production of face brick and hollow building tile and it is used for more than two thousand buildings each year, from the average man's home to the 40-story skyscraper. Our free booklet "Where WESTERN FACE BRICK Were Used in 1914-15" will give you all the details. Won't you write us for it—we may have a building in your town. More than a billion of our brick and hollow tile is in every conceivable kind of a building in practically every State in the United States—also in Canada.

A Complete Line of Face Brick and Hollow Tile

Our line covers every need—from chimney and foundation brick to the most beautiful Face Brick in a full range of colors and textures. Each and every piece is manufactured from shale and fire clay. Our line is medium in price and consists of the following:

Medium Hard Wire Cut COMMONS

Vitrified Hard Wire Cut COMMONS

Vitrified SEWER Brick

Red CHIMNEY Brick

CLOISTERS, smooth face brick, sand finish

RUGS, vertical scored texture

PERSIANS, wire cut face, matte texture

EMPIRES, wire cut face, matte texture

GOTHIC, stippled texture

DORIC, stippled texture

HOLLOW BUILDING TILE, in standard sizes

PARTITION TILE, in standard sizes

You Can Get Our Product Through Your Nearest Dealer

Lumber and Building Material Dealers carry the "Western" line in stock in thousands of cities and towns throughout the United States. There is a good territory still open and we want exclusive dealers for it—tell your dealer to write us for samples and prices.

WESTERN BRICK COMPANY

General Sales Office and Factory DANVILLE, ILLINOIS

"Where WESTERN FACE BRICK Were Used in 1914-1915."

Western Brick Co., Danville: Please send me your free booklet, "Where WESTERN FACE BRICK Were Used in 1914-1915." We expect to use more brick in residence work in the future and would like to be familiar with your line. Also pamphlet showing use of Hollow Tile.

We buy through the following dealer..... We buy direct (.....)

Name

Town

The Open Price Plan Wins

PRICE PUBLICITY AMONG THE METAL INTERESTS BENEFITING MANUFACTURERS, DEALERS, CONTRACTORS, AND BUILDING OWNERS

THIS is an age of co-operation. Business men are beginning to realize that their competitors are human and even may be rather likable chaps.

The building material dealers throughout the country are awakening to the value of organization and co-operation. They are finding that it pays to work with a competitor rather than against him.

One of the greatest troubles of any retailer is not his honest competitor, but the one who, through ignorance of true salesmanship, believes the best way to sell goods is to cut the price.

Any organization that helps to standardize and stabilize markets so that there is a fair profit to the manufacturer, the jobber and the retail dealer is doing a public service to business in general.

There is probably no line of business where the advantage of standardization is of greater value to the retail dealer than that of building supplies. Here is a line of materials to be sold to the contractor usually because they are specified by the architect and sometimes by the owner.

Standardizing a Building Materials

The aim of the Associated Metal Lath Manufacturers is to standardize the manufacture, use and sale

of metal lath, so that the architect may know what to specify for every type of work, the contractor may know what he must figure on, and the dealer will know what material to carry in stock.

The determining of standards for any building material can only be accomplished by scientific and practical experiments. These are costly and could hardly be done by an individual manufacturer, but can be accomplished by associated effort of all the manufacturers in a certain line.

Unbiased Tests

The Associated Metal Lath Manufacturers have carried on fire tests in the East and West to determine the value of metal lath construction, in comparison with other materials for the same purpose. These tests gave to architects and builders information of vital interest to the people of this country which could not have been otherwise obtained.

An officer of the association is constantly in touch with all developments in the revision or adoption of building codes, not only to see that the proper recognition is given metal lath, but to furnish city officials with scientific and practical data to substantiate all claims.

Standard construction specifications for the use of

(Continued to page 100.)



International Asphalt Shingles

Are:

**Rich in Color
Beautiful
Durable
Economical
Fire-Resisting**

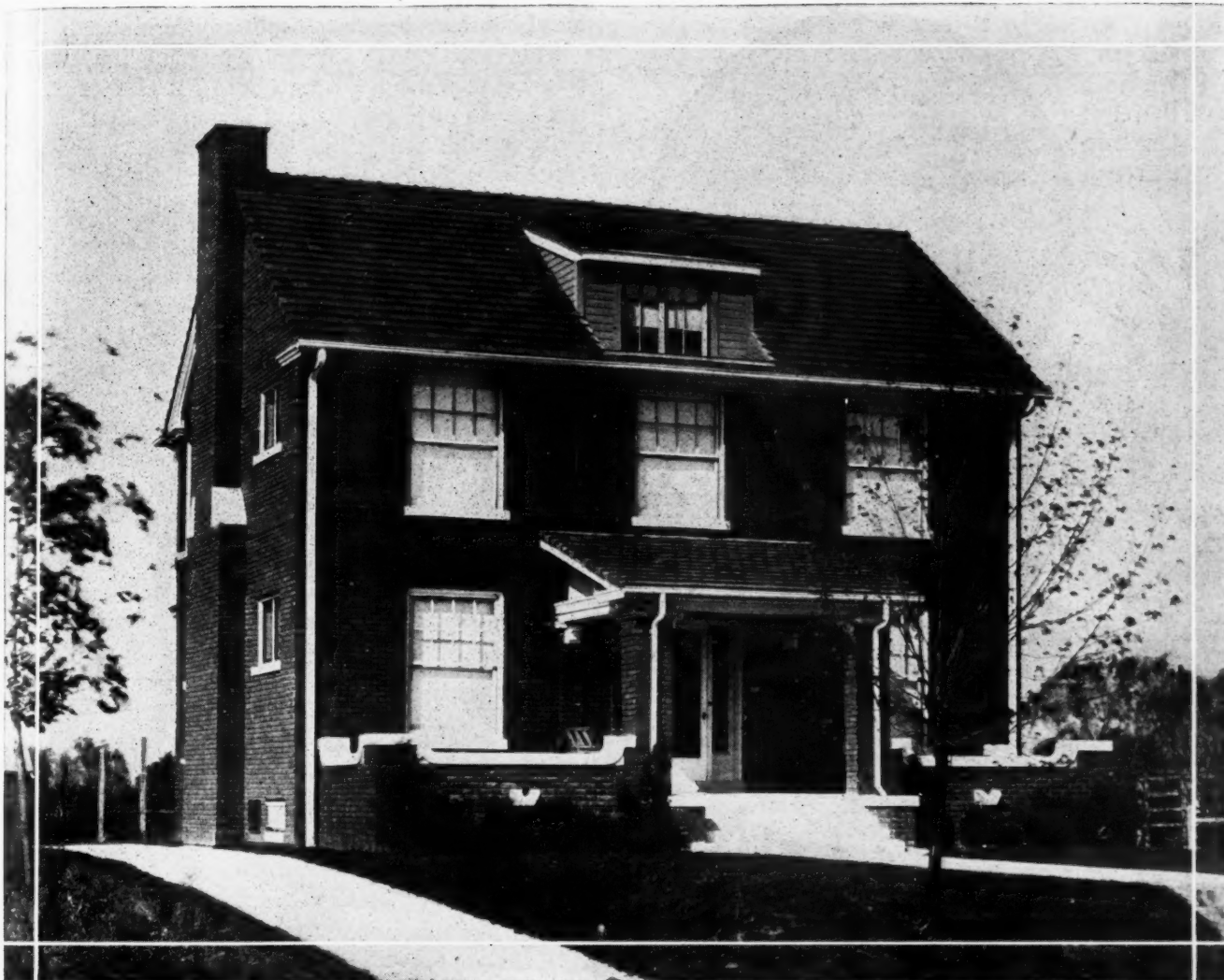
ABSOLUTELY GUARANTEED

International Asphalt Shingles meet every requirement for the Mansion—the Bungalow—the Cottage. They wear like iron. They are practically indestructible, being rot-proof, water-proof and wind-proof. No better shingles have ever been manufactured. No roof covering will give the same service at anywhere near the same cost.

Dealers—Architects—Builders will make friends every time they sell—specify—or use International Asphalt Shingles. Write for samples and prices.

International Roofing Manufacturing Company

5325-45 So. Western Avenue, Chicago



Build with Brick

*Residence of Geo. H. Fretchner, Louisville, Ky.
Built with Belden Mingled Shades 62-63-64.*

A "Belden Brick" for Every Building

If your clients for spring building wish something distinctive get in touch with us at once and let us send you samples and quote you through our nearest dealer. Tell us what you are going to build and give us the size. We will give you valuable building help and show you that the difference in cost of brick and frame construction puts brick easily within the reach of your community.

—On the basis that brick houses make for a higher standard of construction and therefore more good work and more profit to you.

—With the knowledge that once you are familiar with brick construction that you can make more money building brick houses than any other kind.

TRADE MARK

"BELDEN BRICK"
CANTON, OHIO

—With the absolute conviction that "Belden Brick" represent the biggest value you can buy and that we are prepared to give you the kind of service you want.

We appeal to you to investigate carefully brick house construction.

Direct from the Manufacturer

We have dealers in hundreds of cities and towns in the United States and Canada at the present time. We ask you to write for samples and prices and the name of our nearest dealer. Belden Brick are made in five modern factories and come in all colors, shapes and sizes, and in most textures, rough and smooth. We have the very brick you are looking for, be it house, bungalow, garage, theatre, store, bank, church, school, library or office building.

THE BELDEN BRICK COMPANY ESTABLISHED 1885 **Canton, Ohio**

FIVE PLANTS AT CANTON, SOMERSET, UHRICHSVILLE, PORT WASHINGTON

USE THIS COUPON NOW

Belden Brick Co., Canton, Ohio.

Gentlemen:—We are favorable to the use of brick for many purposes and would like to know more about your product. We are figuring

on building (use this line if anything definite)

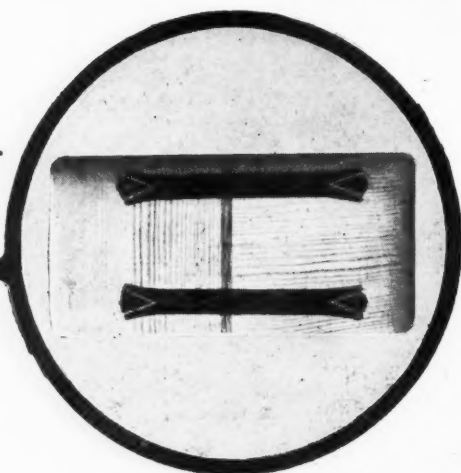
.....

Your name

Address

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

Morgan
Wedge
Dowel
Construc-
tion



These Two Features Win Leadership

No hardwood door is as good as it ought to be unless it has:

- (1) Wedge Dowel Construction.
- (2) All White Pine Core.



are the only hardwood doors that have them. That is why MORGAN Doors satisfy customers, save you money and assure a profitable job. Don't waste time and energy with ordinary doors. Install only MORGAN Doors. They cost little if any more — much less in the end.

Write for MORGAN Millwork Handbook FREE

Displays of Finished Morgan Model Doors
In All Principal Cities — Ask Us Where

MORGAN SASH & DOOR CO.

Dept. A-23, Chicago

MORGAN COMPANY
Oshkosh, Wis.
MORGAN COMPANY
6 East 39th Street
New York, N. Y.

MORGAN MILLWORK CO.
Baltimore, Md.
MORGAN SASH & DOOR CO.
Detroit, Mich.



Morgan
All
White
Pine Core

metal lath have been conscientiously formulated.

This association was an important influence in securing the establishment by the U. S. Government of the Bureau of Standards at Washington, D. C. Elaborate tests of stucco and metal lath are now being made by this bureau, and its progress report will soon be published.

Tests for sound-proofing partitions and walls are now being made at one of the great universities for this association.

The Associated Metal Lath Manufacturers have decided to spend thousands of dollars with the Underwriters' Laboratories in Chicago, so that metal lath construction may be given a final inspection and indorsement by the leading authority on fire-resistive construction.

All of this is of great indirect value to the dealer, but the matter of stabilizing prices is of more direct interest.

Absence of Price Secrecy Steadies Market

In reviewing their work a little over a year ago, the Associated Metal Lath Manufacturers saw that while they were accomplishing a wonderful amount of good for the metal lath industry, the vital need was to have immediate and reliable information regarding the prices quoted on metal lath. Yet this must be accomplished without any agreements fixing prices.

The open price plan was adopted. Each and every member of the Associated Metal Lath Manufacturers notifies the office of the association of any change in his quotations and these are promptly bulletined to the other members. In this way, as thru a "board of trade" or "stock exchange," every manufacturer knows what the current prices for metal lath are. There are absolutely no agreements on the prices of lath, no restrictions on sales or allotment of territory.

This simple, fair and right exchange of true market information has cured the cancer of distrust, promoted intelligent competition and put the metal lath industry on its feet.

The market information exchanged by these manufacturers consists of the prices quoted their distributors or jobbers, but as those individuals resell to dealers and contractors, naturally only one-half of the market information may be secured in this way with any dispatch.

To provide for promptly reporting the fluctuating prices in the larger cities between jobber, dealer and consumer it became necessary to organize "local associations" in the important cities.

These local associations enroll the branch houses, representatives and jobbers directly representing the manufacturer.

These local organizations exchange with each other through their local director's office, all prices which they quote on metal lath, as well as a weekly sales report which gives all details of sales excepting the buy-

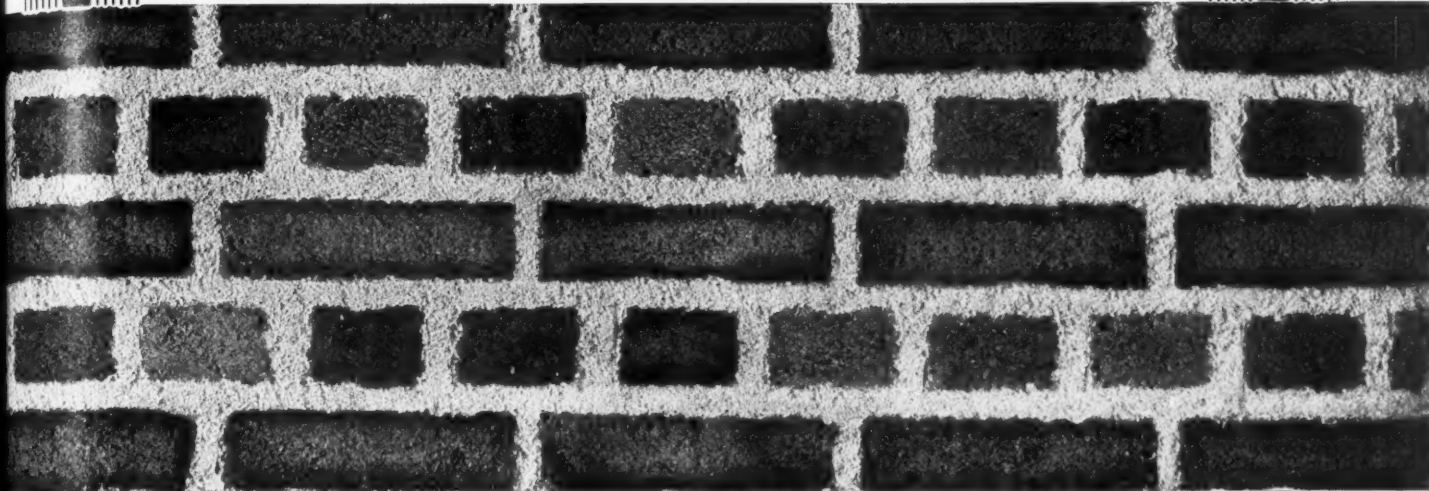
(Continued to page 104.)

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

Modern Examples of Bonds and Mortars

By Kansas Buff Brick & Mfg. Co., Buffville, Kansas

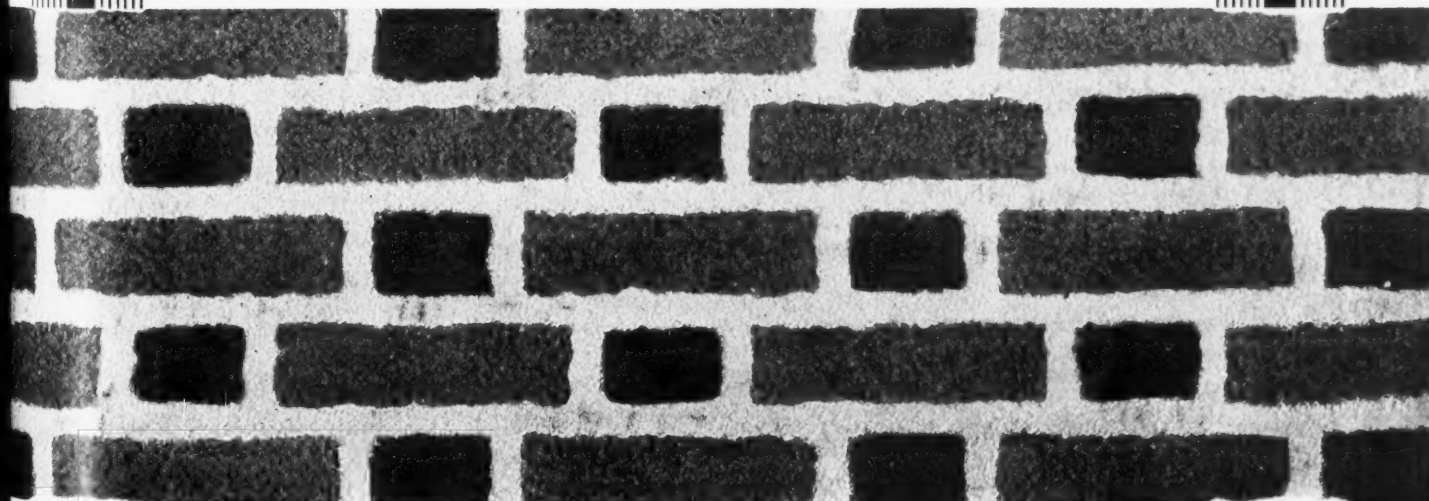
(Send for portfolio in natural colors of twenty others—it's FREE)



Navajo Stretcher No. 306, Mingled Shades. "Navajo" Headers, White Mortar 3-4 inch flush joint



Navajo Light No. 308, Red Center, Cream Mortar 5-8 inch flush joint



Navajo Stretcher No. 208, No. 300 "Navajo" Header, Flemish Bond, White Mortar 3-4 inch flush joint

Our "Navajo" and The New "Brocade" are popular among Home Builders. If you are planning homes for any of your trade, these numbers will appeal to them—they are made in many shades and colors (send for free portfolio). We also have suitable designs for any church, school, store, theatre, garage, etc., that you may be planning. You better let us work with you.

THE KANSAS BUFF BRICK MFG. CO., Buffville, Kansas

Sales Offices in all principal cities in the middle west

We have many dealers now—we want more

BUILD WITH BRICK



A HY-TEX HOUSE BY JOHNSON & MILLER, BRAZIL, INDIANA

The kind of a house people want

MR. CARPENTER and Builder, you have a large opportunity for increasing both your influence and your income, if you care to do so. Some people, it is true, like frame houses, and you are ably prepared to meet the demand. But a good many other people want *brick* houses; to what extent are you meeting this demand? Or have you been trying to persuade them to take something else "just as good"?

It is poor business policy to oppose the natural demand of your clients, especially when their demand is based on reasons for a brick house which cannot be denied. To them the brick house looks substantial and well-to-do as no other. And

they know that it is permanent, weather-proof, fire-proof, economical in up-keep, fuel, and insurance, and so attractive as to rent or sell readily if circumstances so require. People are proud to live in a Hy-tex house.

Meet this natural and growing demand for the brick house, and you will find not only that you can build as easily with brick as with wood, but that in terms of dollars and cents it is your best business policy. You will be satisfying a new and larger class of people and thus greatly increasing your scope of usefulness and influence as a builder. You at once take a higher standing in the community. Seize the opportunity *now* and get into the front line of advance.

Hydraulic-Press Brick Company

SAINT LOUIS

IT WILL pay you to get these booklets and read them. They are yours for the asking. Remember that

Hy-tex

The Standard of Quality in Brick

is served with the same promptness and efficiency from all of our Branches as from the Home Office: Baltimore; Chicago; Cleveland; Davenport; DuBois, Pa.; Indianapolis; Kansas City; Minneapolis; New York City; Omaha; Philadelphia; Toledo; Washington; and Zanesville. Write to any of them for information, color cards, or samples.

Hydraulic-Press Brick Co.
SAINT LOUIS

Largest Makers of Face Brick in the World

SUGGESTIONS FOR SMALL Hy-tex HOMES

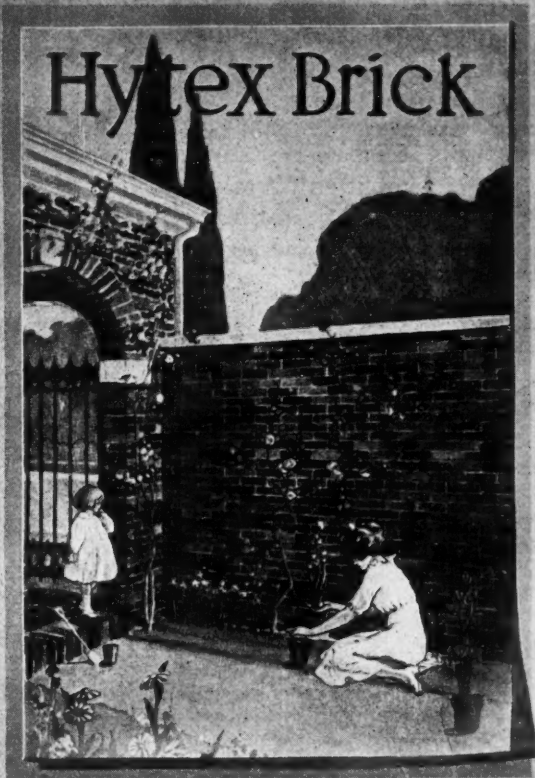


— CUBICAL CONTENTS —

MIN. PART	
1 1/2 x 2 1/2 x 2 1/2	10725 cu ft
ENTRAL WALL AND DOOR	
35 x 15 x 15 1/2	7774.25
WATER 42 x 15 x 15 1/2	476.125
ROOF 12 1/2 x 12 1/2 x 12 1/2	505.375
UNDER DRAIN ROOM	
12 1/2 x 15 x 4	670
LAUNDRY & STORES	
12 1/2 x 15 x 15 1/2	1480
AREAS, STEPS ETC	120
COST \$3846.50 1/2 x 12 1/2 x 15 1/2 cu ft	



Hy-tex Brick



HYDRAULIC-PRESS BRICK COMPANY

SAINT LOUIS
CENTRAL NATIONAL BANK BUILDING

Tear off this coupon and mail today before you forget it

Hydraulic-Press Brick Company

St. Louis, Mo.

Gentlemen: Please send your two booklets offered in the American Carpenter & Builder, December, 1916, to:

Name.....

Address.....



Marc Eidlitz & Son,
Building Contractors

Chas. A. Platt,
Architect

Superior excellence and matchless beauty

Because KOHLER enameled Bath Tubs, Lavatories and Sinks are notable for excellence of materials and workmanship, as well as for the beauty of the enamel and the hygienic designs, they are chosen for houses apartments and hotels of the highest class.

The "Viceroy" one-piece built-in bath well represents the general superiority of

KOHLER WARE

—Always of one quality—the highest

Owing to manufacturing economies we are able to maintain reasonable prices on KOHLER WARE of all patterns. KOHLER Bath Tubs, Lavatories and Sinks are made available for moderate priced buildings as well as for those demanding the most elegant equipment.

Look for our *quality guarantee*, the name KOHLER permanently incorporated in faint blue in the enamel of every bath tub, lavatory and sink that we produce.

Builders who wish to avoid the possibility of making mistakes in choosing enameled plumbing ware select KOHLER products, notable for their unvarying excellence and modern, hygienic patterns.

Write for a free copy of our interesting book, "KOHLER OF KOHLER." It tells you all about us.

"It's in the Kohler Enamel"

KOHLER CO.

Founded 1873

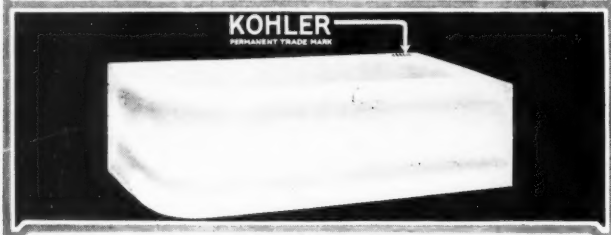
Kohler, Wis., U.S.A.

Shipping Point: Sheboygan, Wis.

BRANCHES

Boston	New York	Philadelphia	Atlanta
Pittsburgh	Detroit	Chicago	Indianapolis
St. Paul	St. Louis	Houston	
San Francisco	Los Angeles	Seattle	London

The "Viceroy," Plate V-12
[Patent Applied For]



er's name. This enables each member to see if he is getting his share of business at fair average prices.

A good salesman has pride in his product and will get the market, or better, for his goods if he knows what the market is. With this system he does know.

These "local reports" are dispatched to the office of the association and promptly relayed to each manufacturer.

This means that any and all manufacturers not represented in such centers, but who may have a call from a buyer in that market, will know what prevailing prices in that market obtain at that moment and thus such bids are intelligently made.

This permits and develops high-grade salesmanship, but in no way fixes prices. Any and all sellers are privileged to quote any prices they may desire, but the confirmed dyed-in-the-wool "price cutter" will either reform, under this publicity, or his manufacturer will see that he has an "order taker" and not a salesman.

Everybody Benefited

Contractors submitting competitive bids for construction work are directly benefited by this plan, which eliminates secret prices and unfair rebates.

The results of this plan are now beginning to be seen nationally and are meeting the approval of the dealer, who is willing to play fair with the purchaser, compete honestly with other dealers and make a fair profit on his sales.

It is believed that the Associated Metal Lath Manufacturers is the first association to carry this broad-gauge, modern business, co-operative plan down thru all the stages of distribution for metal lath to the acknowledged benefit of all concerned from manufacturer to consumer.

The plan builds business, refines business men and, strange as it may seem, delivers an improved product to the consumer at no advanced or unwarranted prices.



There is a Reason

The time has been when the TIME taken for any certain job did not make any difference. That was the day of the ox-cart or at best of the lumber wagon. Mr. Efficiency has been abroad in the land of recent years.

Slow-moving machinery costing thousands of dollars has gone to the scrap heap to be replaced by machines having greater output per hour. The slow-moving stage has been replaced by the flyer so that Chicago is closer to New York today than Philadelphia was yesterday.

Records of speedy automobiles are broken every day by still more speedy machines. This spirit of "speed" is in the air. It is everywhere. It is at the bench. No workman of today wants to tire himself and kill time by using a dull saw. Nor does any workman want to give more time in the filing of his saw than is necessary.

The Delta File Works, Philadelphia, knowing the demands of the times, produced sometime since a file to meet these requirements. They observed that there was the same loss of time in placing a short file as in placing a long file ready for

(Continued to page 106.)

Build with Brick



"A Fire-Proof Brick Bungalow at Less Than Cost of Frame"

Not our statement, but the Owner's

House 38 feet long by 26 feet wide, not including porch. Porch 8 feet by 26 feet. Five rooms and bath. Hardwood trim in all rooms except kitchen and bathroom. Price includes wiring, gas and water pipes, and hot air furnace.

The house was built by Al Hesse, a contractor, with rough texture face brick, backed up with hollow tile, on hollow tile foundation, for the sum of \$2,475.00 complete. Contract price submitted for frame \$2,600.00.

Mr. FRED L. ERTLE, Owner.

Such a saving is worth the consideration of every builder, to say nothing of the much more finished appearance of a brick home. Everhard Face Brick can be obtained in many beautiful textures and colors and presents a pleasing surface not secured with any other medium. Besides the rate of depreciation will be lower; insurance rates will be less; paint bills will be eliminated; and the house will be warmer in winter and cooler in summer.

We have Complete Bills of Material in Three Types of Construction with Floor Plans for you Free

Contractor Hesse has made complete bills of material of this bungalow in three types of construction—face brick veneer, face brick on hollow tile and face brick on common brick. We have duplicates of the bills of materials we want to send you without charge, together with the floor plans so that you can figure the cost in your own town. With these for a guide you can "Build with Brick" as easily as you can with frame and give the building public better homes.

Everhard Face Brick are Easy to Get

We have Distributing Agencies in all parts of the country and we will be glad to send you samples and quotations on any work you are planning for spring.

THE EVERHARD COMPANY, Massillon, Ohio

Distributing Agencies in All Principal Cities

----- This Coupon Will Get You Valuable Information -----

THE EVERHARD CO., Massillon, Ohio.

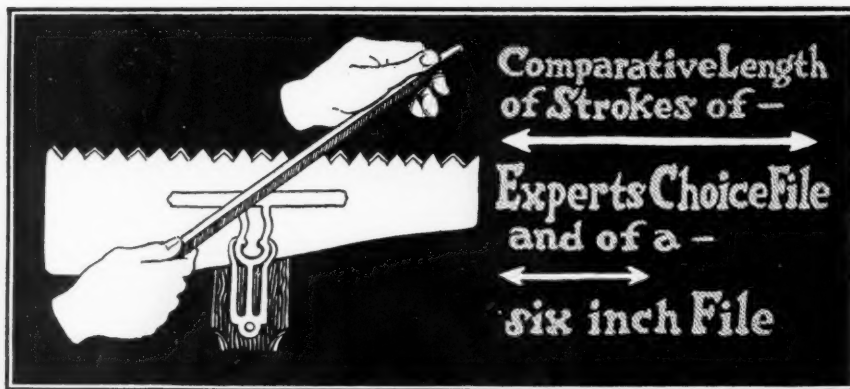
Gentlemen:—We are interested in the fire-proof brick bungalow you show in the December issue of the American Carpenter and Builder and would like free floor plans and bills of material in order that we may have them to show several people who expect to build next spring. We usually buy our material through

name of local dealer)..... (If you buy direct check here).....

Name.....

Address.....

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER



The "Expert's Choice" Delta File Does Twice the Work of the Ordinary File in Half the Time.

the stroke. They also observed that there was the same wastage at the ends of a short file as of a long file.

From this it was easy to see that more of a long file was used than of a short file and more work done in the same length of time.

They then experimented to secure a steel of the right carbon, to cut a tooth that had the right backing so that it would not break, yet had a sharpness to cut easily and rapidly.

One of their tests was to determine the maximum length that could be used by expert mechanics to advantage. Lastly, a series of tests was made to secure an ideal hardness without a flintiness.

When all these problems were solved—material, tooth,

length, temper—they placed this file in the hands of workmen in various parts of the country.

The results have been beyond all expectations. They say that if they published some reports that come in they would not be believed.

They content themselves with stating that this file will do TWICE the work in HALF the time—which is going some.

They named this file the "EXPERT'S CHOICE." Its cost is modest.

Users have stated that the time saved makes it worth double its cost, even if the ordinary file could be had without cost.

Thousands of dealers find it to be most popular with their tool-buying customers. Some dealers do not handle it, because one Expert's Choice file does so much more work than any other file and they think it would reduce sales. It is a regular race horse for speed and like race horses it has to be properly used. An old plug of a horse or a file will stand more abuse.

The accompanying cut illustrates the gain in the length of stroke. The Expert's Choice is made for fine, also coarse tooth saws.

A letter addressed to the Delta File Works, Philadelphia, will secure any desired details.

The Lesson Fire Taught

The world will never be shocked and horrified again by the story of a fatal fire in the Missouri Athletic Association Building for the beautiful new building shown herewith is an almost perfect example of fire resisting construction.

Kno-Burn

TRADE MARK REGISTERED U. S. P. O.

Expanded Metal Lath

forms the base for all interior plastering. XXth Century type was used—acid resisting.

"Kno-Burn" is just as practical for use in the five room bungalow as in this big building. Send for Booklet 33 and find out how.

North Western Expanded Metal Co.

Manufacturers all Types of Expanded Metal

903 Old Colony Building

CHICAGO, ILLINOIS



WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

BUILD WITH BRICK

Alliance Multi-Color Brick

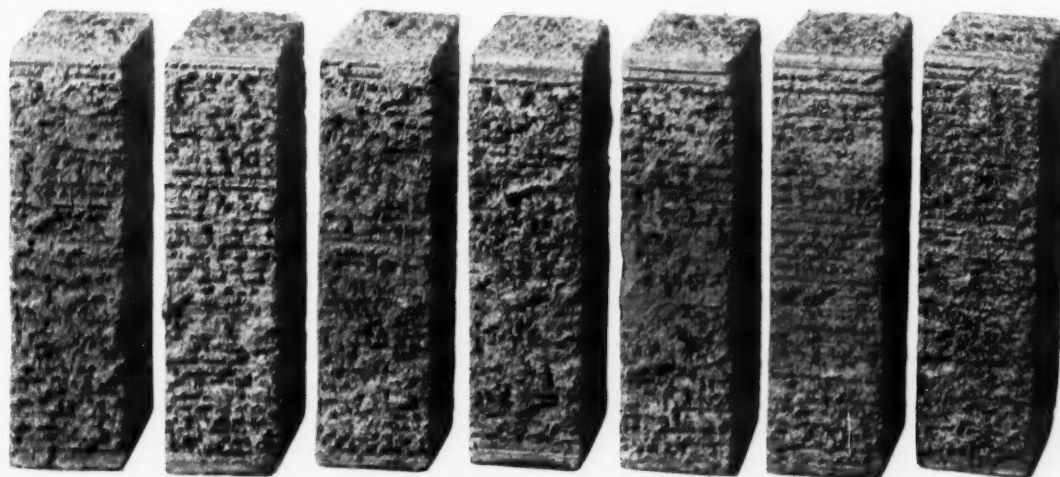
The panel of Alliance Multi-Color Brick, reproduced below, is shown to give you an idea of their beauty in an actual wall. They are particularly suitable for any house or bungalow published in the American Carpenter and Builder. All you have to do is to send us the design number and we will tell you exactly how many bricks will be required and give you a price through your dealer. Please give us the name of your dealer.



Alliance Mu'ti-Color Brick No. 76.

Alliance Multi-Color Brick excel all other brick as to beauty of coloring. The chromatic scale of colors runs through the beautiful Rough-texture faces, most of the individual brick showing on the face of each brick three or four or more of the seven primary colors or their shades---gun-metals, wines, chocolates, browns, ox-blood reds, buff tones and multi-colors.

These brick are made of Ohio shale of the highest grade. They are thoroughly vitrified, permanent in color, standard in size---right in every characteristic. They are being used in many of the finest buildings in America.



The Seven Types of Brick in Alliance Multi-Color Brick No. 76.

The seven Brick above illustrated represent the seven distinct types of brick composing the panel above. Study these two illustrations---they tell of wonderful possibilities for the architect and builder. The dark wine or gun-metal brick at the right of above seven brick is also sold as a straight shade---Alliance Gun-Metal Brick No. 75.

Mr. Dealer: Alliance Multi-Color Brick will get you business. Write for dealers' prices, territory, etc.

THE ALLIANCE BRICK CO., ALLIANCE, OHIO

Beauty on my hearthstone blazing!
 * * * * *
What warm protection dost thou bend
Round curtained talk of friend with friend.
 —Lowell.



Alliance Multi-Color Brick Fireplace No. 1--Price, \$30

Height 4' 9"; Width 5' 3"---Opening 2' 2" High, 2' 3½" Wide---Projection from Wall 5", Shelf 9"

These dimensions can be varied somewhat, to meet requirements.

Price includes all plain and special brick for facing and for backwall and sides of opening, all brickettes for hearth and underfire (no wood shelf or ironwork), all properly packed and delivered f.o.b., Alliance, Ohio.

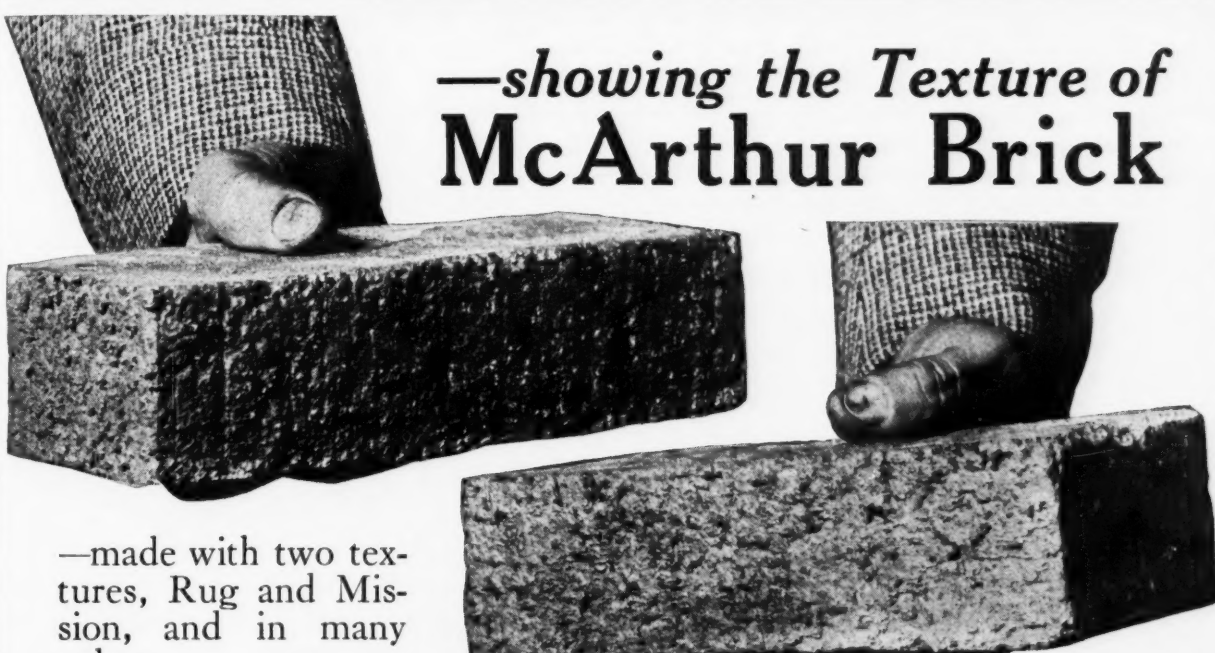
Brick are rough-face, 2¼x4x8¼ inches. "Brickettes" in hearth are smooth-face, 1x2¼x8¼ inches.

A "Setting Drawing," showing floor plan, elevations, correct flue design, and complete and definite scaled drawings for erection, is furnished with each fireplace.

Sample brick will be sent if desired.

Write for circular showing other fireplace designs.

THE ALLIANCE BRICK CO., ALLIANCE, OHIO



—showing the Texture of McArthur Brick

—made with two textures, Rug and Mission, and in many colors.

It is becoming more and more recognized among builders that inferior building materials are in the end more expensive than brick from every point of view—that a brick house is warmer in winter and cooler in summer—that it is safer from fire—and that more beautiful effects can be obtained from brick.

But it is NOT generally known which brick are best suited for particular purposes.

McArthur Face Brick are unsurpassed in beauty of design and durability. They can be obtained in almost any desired colors, and lend themselves admirably to designs that are different in a pleasing way. Our guarantee and your dealers will assure you of service, and one look at the brick themselves will convince you of their superior appearance.



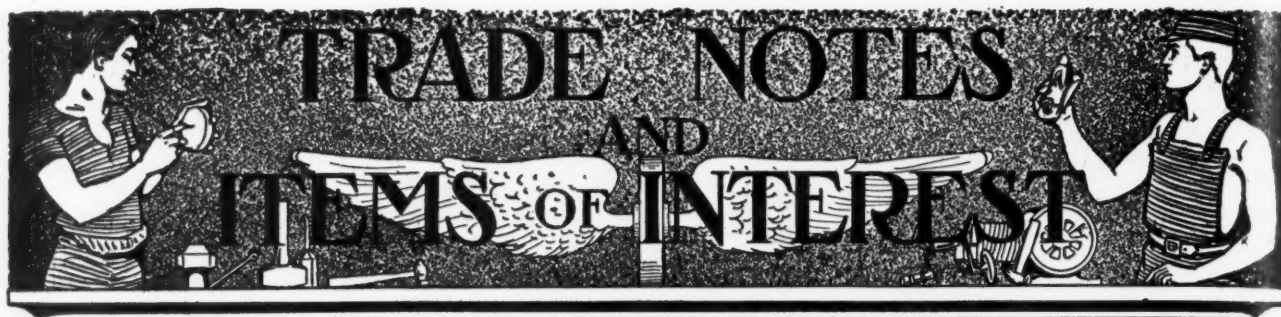
Build with Brick

We cannot begin to describe in this space the many colors of McArthur Face Brick. But we do ask you to write for information and samples, and to send us your dealer's name. We will send you all the information you desire. Drop us a postal now while you think of it.

McArthur Brick Co.

Warehouses and Distributing Agencies in All Principal Cities

McArthur, Ohio



THROUGH this department the Editors aim to keep builders, contractors, carpenters and architects in touch with what their friends, the manufacturers, are doing for them in new or improved tools and machinery, methods and materials—pertaining to building. These items are offered here as interesting information for our readers; they are not advertising. Take full advantage of the Bargains offered. Write for catalogs and booklets, and become thoroly familiar with these Improvements and New Goods.

Here's Your Chance to Butt In

THE STANLEY WORKS, NEW BRITAIN, CONNECTICUT, OFFER FIFTY DOLLARS IN PRIZES FOR BEST REASONS WHY DOORS SHOULD BE HUNG ON THREE BUTTS.

When the mail man turns over that new issue of "A. C. & B.," do you unconsciously run thru it from the back to the front? It's surprising how many people look over the advertisements first—maybe it's because they are purposely made easy to read, but here's the point:

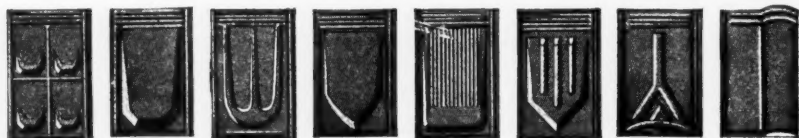
If you have given the advertisements the first choice, you have already noticed an announcement to the effect that a certain large New Britain hardware manufacturer is willing to part with \$50 for some good ideas. When you think it over, that \$50 should be a pretty good investment, for where is there a better field for good ideas on such a subject as the advisability of using three butts instead of two on the average

door, than among the men who have been swinging doors into usefulness all their lives.

Probably there are few of you who cannot recall several times when you have been called in to rescue some door from a nervous collapse. How many times have you wondered why people expect a door to stand the abuse which it is usually subjected to with no better support than two weak little butts? Maybe you have never before found an opportunity to turn loose with your views on the subject with any hope that what you would say might do some good. If so, here's your chance to get it out of your system, and you may land in the prize list at the same time. Some carpenter or

(Continued to page 112.)

WALTER'S AND COOPER'S PAINTED TIN SHINGLES



The Shingles that Last

THIS IS THE ROOFER'S OPPORTUNITY

We require an agent in your town; may we have the pleasure of sending you a selling proposition, the acceptance of which will put you in a way to unusual profits?

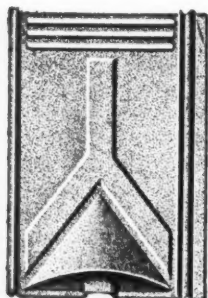
Why use high priced Galvanized Roofing? Walter's or Cooper's Painted Tin Shingles will make a roof just as lasting and cost you about one-half as much.

A painted tin shingle to be enduring must have as its base a heavily coated sheet of roofing tin, well covered with a lasting coat of paint. This paint must be flexible and dry, tough and hard. On exposure to the sun, it must not flake, chip or scale.

Walter's and Cooper's Interlocking Tin Shingles

are stamped from the best grade of roofing tin, and are individually coated by the dipping process in a bath of paint to the above specifications.

Walter's and Cooper's Painted Tin Shingle roofs put on over thirty years ago, are in as good condition today as when first put on the roof. Not only are they long lasting, but they are fire, wind, snow, storm and lightning proof, and are sold under an iron-clad guarantee that they are right in every way.



NATIONAL SHEET METAL ROOFING CO.

339-345 Grand Street

JERSEY CITY, N. J.

Build With Brick



*"Not by frost, nor fire, nor flood,
—Nor even time itself are well burned clays destroyed."*

Attractive Homes of Brick Are Now Within Your Reach

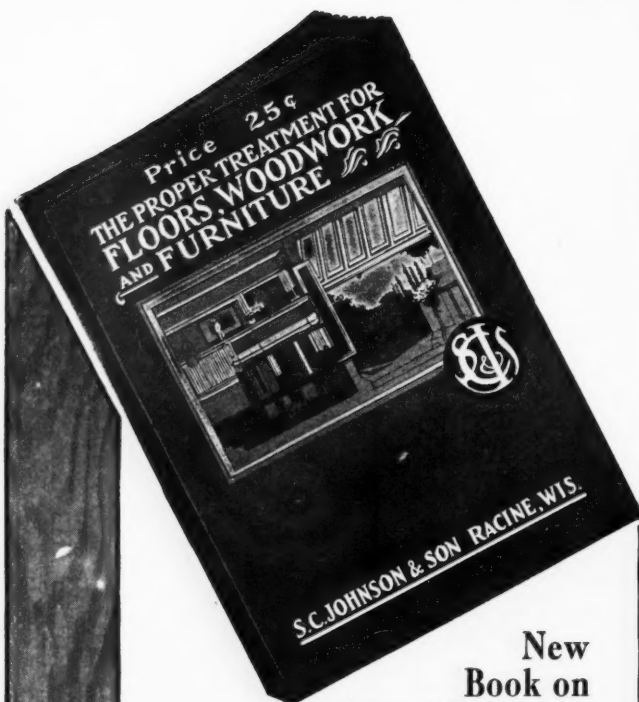
Contractors everywhere are switching from frame to brick construction. Many of them are making the same price for brick that they did for frame; even at an advance of 5% or 10% it is more economical when you consider the many advantages of brick construction—lower insurance, no painting, no decay, cooler in summer, warmer in winter, always beautiful and better looking with age.

OF "THE BEST IN FACING BRICKS"

Our new catalog shows our product in natural colors in the regular and special shapes, gives numerous examples of modern bonds and mortar joints, and simple rules for figuring brick. Please send for it, select a brick or two that will look well with a couple of jobs you are figuring on and let us send you samples and quote you through your nearest dealer—if you do you will soon be switching from frame to brick—it's the logical home building material.

THE BEAVER CLAY MFG. COMPANY, New Galilee, Pa.

Write for our big new catalog of Brick and Fireplaces, in natural colors



New Book on Wood Finishing

EVERY architect, contractor and builder is entitled to one of these new books free for the asking. It is a valuable handbook on interior finishing, beautifully illustrated in nine colors.

It tells how to finish inexpensive soft woods as beautifully as hardwoods and gives complete specifications for finishing woodwork and floors with

Johnson's Wood Dye

These dyes are not pore-filling varnish stains but coloring matter that penetrates deeply into the wood without raising the grain.

Johnson's Prepared Wax

is the most extraordinary polish for interior woodwork and floors. It gives a hard, dry, glass-like surface that does not collect dust.

If you are not familiar with Johnson's Wood Dyes and Prepared Wax we shall be glad to send you samples for experimental work or finished wood panels showing the various shades of Johnson's Wood Dye.

A.C.B.-12

Please send me free and postpaid my copy of your new 25c Instruction Book, "The Proper Treatment for Floors, Woodwork and Furniture."

Name _____

Address _____

City and State _____

Fill out this coupon and mail to

S. C. JOHNSON & SON

"The Wood Finishing Authorities"

RACINE

WISCONSIN



Wasted Energy—Screws that Won't Hold in Solid Wood Can't Be Helped by "Plugging."

builder—maybe an apprentice—is going to get \$25 for scratching his head and then scratching down the winning story. The fellows that come in for the lesser prizes are not going to regret the effort.

The inspiration for the story is easy to find. Look around your neighborhood and somewhere you will find a two-butt door with half of the screws pulled out, a circular mark showing on the floor where the door has been dragging and a squeak chorus ready to greet you if you try to enter. Open and close this door a few times and then go home and think it over. Let it soak in good. Of course, it will occur to you that if the strain on the screws in that door butt hadn't been so great the screw threads wouldn't have stripped the wood. Why not divide the load between three sets of screws instead of two?

Maybe you have walked into a good-looking office to see some man on business and as soon as you put your hand on the door knob you could feel something wrong—squeak—crunch—grate. Felt like taking off your coat and doing something right there, didn't you? A man doesn't like to have a squeaky, sagging door stand in the way of his welcome. The man behind the desk can't stand it very long if everyone who enters his office gets in on a squeak. He will probably say words about the man who hung the door when he should be peeved at the tradition that keeps the two-butt door in existence.

There are any number of doors to spur you on: The door with a crack which lets in dirt and cold air, the door with the lock out of line, the door with a squeak that wakes your wife when you come in late at night, the door that sticks when you try to open it, and then opens suddenly, much to the discomfort of your nose. These doors all get the blame for what is often not their fault. The more the door proposition is studied the more conclusive is the evidence which will eventually place three butts on the average door.

(Continued to page 114.)

STREATOR BRICK COMPANY

Streator, Ill., manufacturers of Shale-Tex Face Brick. We are now specializing in

Our New Embossed Texture

Beautiful, Artistic, Unique. Shows its rough texture at a distance and is not mechanical in appearance.



A COMPLETE "SHALE-TEX" LINE

The complete "Shale-Tex" line consisting of wire cut, repressed and two styles of Rough Texture Face Brick in seventeen (17) styles and shades, all made from the famous Streator Shale, offers you an unusual opportunity to select the very brick that your next job demands to give it character and individuality.

Unexcelled Shipping Facilities

Streator is located on the Santa Fe, Burlington, New York Central, Wabash and Chicago & Alton. With these unusual trunk line facilities for shipments in any direction you are assured of economical and prompt deliveries wherever you may be located—two important items in your business.

Samples and Quotations Promptly Furnished

Use the coupon below to notify us of your spring building plans and let us help you in the use of more Face Brick—there's a better profit for you in brick construction and more satisfaction for your customers.

STREATOR BRICK COMPANY, Streator, Ill.

STREATOR BRICK COMPANY, Streator, Ill.

Gentlemen:—We have the following jobs under consideration which could be built of brick:

Houses.....

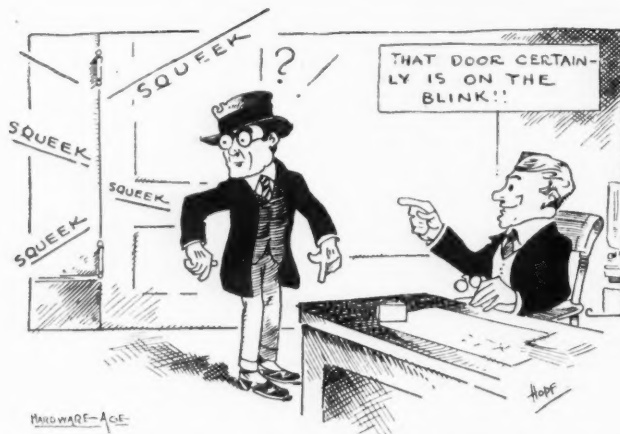
Other Buildings.....

We would like to have samples and prices of your brick and any help that you can give us get the business.

Your name.....

Your address.....

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER



This Shows What Takes the Welcome Out of "Good Morning."

Here's a tip you may be able to use: The chances are you are pretty well acquainted with a hardware dealer in your town. Maybe he is one of the dealers who has found the wisdom in delivering three butts to the box over his counter. There are quite a few hardware dealers who have taken the liberty to insist on what their judgment tells them is the right thing. If you know such a man, find a vacant hour and get him started on the three-butt proposition. You'll probably need the whole hour.

The publishers are proud of the statement which they often make when someone asks about the men who read the *AMERICAN CARPENTER AND BUILDER*. It would take too long to reproduce the entire statement, but stripped of the flowers of speech which are the result of well-founded enthusiasm, it would be something like this: "The readers of the *AMERICAN CARPENTER AND BUILDER* include that class of men who do

things, are proud of what they do, and are not satisfied until they do them *right*." This statement is not founded on fancy, but on facts based upon the large number of letters received from subscribers telling of their work, and upon conversations with subscribers who accept the standing invitation to call at the Radford Building in Chicago. Maybe you don't see what this has to do with three-butt doors. Here's what—When the judges go thru the "three-butt stories" down at the Stanley Works, after the contest is over, there will be some mighty good reasons found why the exodus of the pasteboard box with two door butts in it should be staged in the near future. And there will be more evidence to prove that statement about *AMERICAN CARPENTER AND BUILDER* readers.

Some day there will be a large number of butts packed three in a box. The influence of the "three-butt stories" coming from the men who put up the doors will be strongly felt in bringing about this reform.

Those who enter into this contest will have a personal interest in it and their influence will help others to line up in one of the channels leading to Better Building. Sharpen that old pencil and show the Stanley Works that the readers of *AMERICAN CARPENTER AND BUILDER* can butt in with some good ideas when the call comes.

Now don't let this chance slip your mind! Twenty-five dollars for the best reason for hanging every door on three butts. You may never get another chance to cash in on your thoughts at such a high rate. Better turn to pages 124 and 125 and read the condition of this contest.

✱ "Cut Your Overhead 50%"

The above title is given a folder being distributed by the C. H. & E. Manufacturing Co., Milwaukee, Wis. The purpose of this folder is to help the contractor to get an idea of the

(Continued to page 116.)

The Key to Added Service is **KEYSTONE** Copper Steel



Proved under actual service conditions to be most durable and satisfactory for *Black* and *Galvanized Sheets*, and *Roofing Terne Plates*. Every possibility in sheet metal construction is best met by our **KEYSTONE** Quality.

KEYSTONE COPPER STEEL ROOFING TIN is highest in quality and most satisfactory in service. Grades up to 40 pounds coating. Every builder should have our booklet "Copper, Its Effect Upon Steel for Roofing Tin."

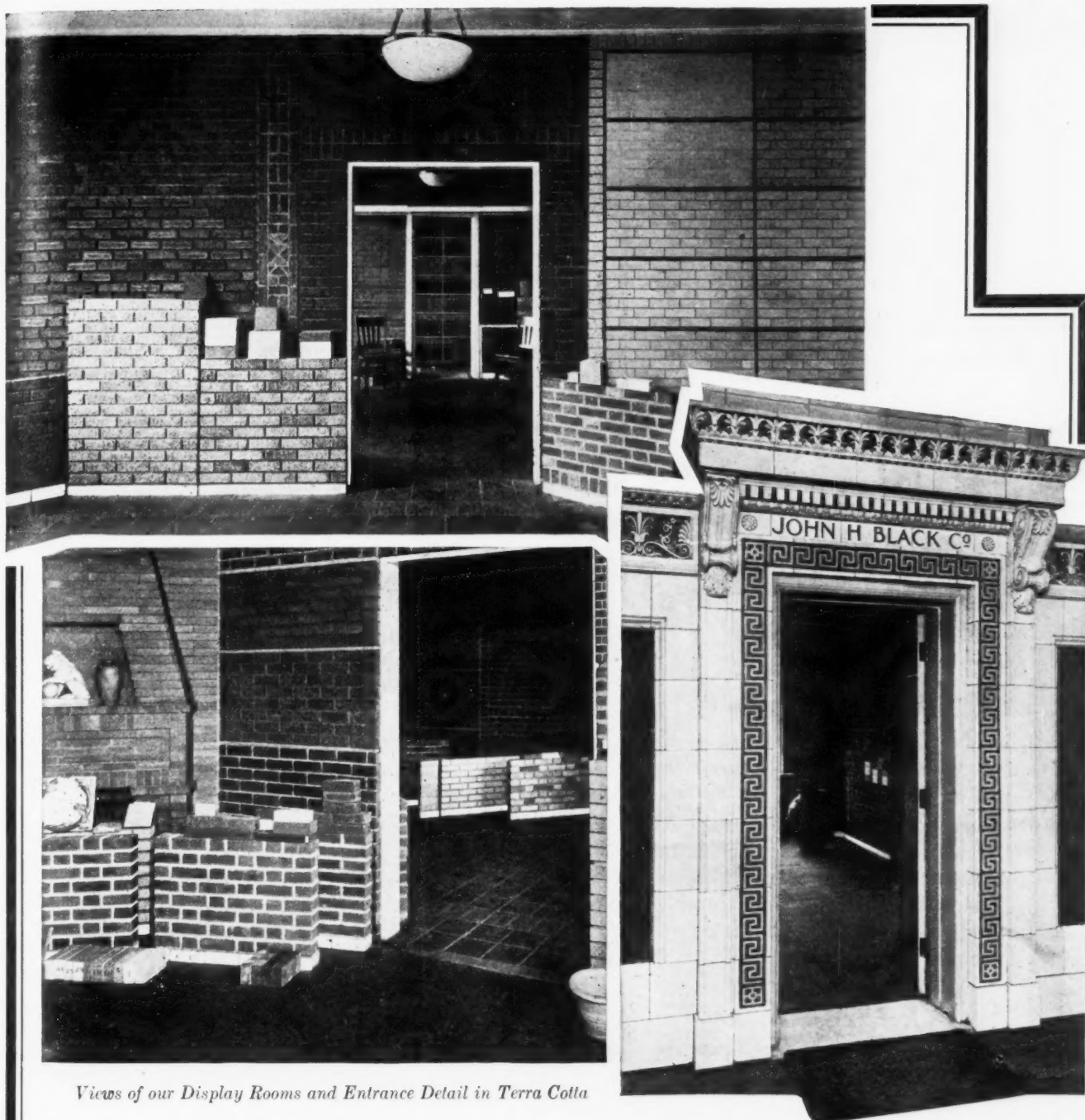
APOLLO-KEYSTONE GALVANIZED SHEETS are unequalled for all forms of exposed sheet metal work. We also manufacture Apollo Formed Roofing and Siding Products, Black Sheets of every description, Special Sheets, Etc.

American Sheet and Tin Plate Company

GENERAL OFFICES: Frick Building, PITTSBURGH, PA.

DISTRICT SALES OFFICES:

Chicago Cincinnati Denver Detroit New Orleans New York Philadelphia Pittsburgh St. Louis
Export Representatives: UNITED STATES STEEL PRODUCTS COMPANY, New York City
Pacific Coast Representatives: UNITED STATES STEEL PRODUCTS COMPANY, San Francisco, Los Angeles, Portland, Seattle



Views of our Display Rooms and Entrance Detail in Terra Cotta

Everything in Face Brick and Terra Cotta

In addition to our Jewettville product, we are Manufacturer's Distributors for a score or more of other factories, and our complete line consists of everything known to the Art of Clay-Crafting in these materials. We will be glad to give you further information, samples and prices to cover all your requirements in Face Brick and Terra Cotta. With your inquiry give us, please, the name of your local dealer.

JOHN H. BLACK, *President*

JEWETTVILLE BRICK COMPANY

72 Builders Exchange

Buffalo, New York

Keeps Down Investment —Brings Up Profit

Builders of investment property desire the lowest possible cost because cost determines the profit on the investment.

Yet, at the same time, they must not sacrifice either quality or appearance. Give them what they want! Recommend the one wood that best serves their purpose—

North Carolina Pine

"The Wood Universal"

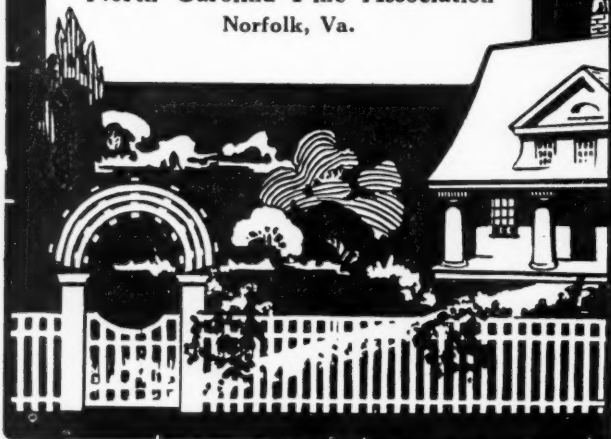
No wood at the price can equal it, whether used for interior or exterior work.

It possesses a rare beauty of grain; is splendidly responsive to paints, varnishes, wax, stains or enamels; is strong and durable and easy to work. And it is exceptionally low in cost.

Send for Free Reference Book

We have prepared a most instructive reference book on North Carolina Pine. It is not merely a compendium on North Carolina Pine but a most profitable help to every contractor and builder. Ask for Book A.

North Carolina Pine Association
Norfolk, Va.



particular equipment which will most nearly meet his needs, and thus facilitate matters in sending more complete information in regard to any special equipment.

The folder is especially well illustrated and gives a brief description of several well-built pieces of contractors' equipment. There are five C. H. & E. power pumps illustrated. These five pumps are built to meet the need for high-grade pumping equipment suitable for as many kinds of work. There is a bilge trench pump, centrifugal pump, piston force pump, triplex pump and road oil pump. The gasoline engine and pump, in each case, is mounted either on skids or on a truck.

Another part of the folder describes the C. H. & E. engine driven builders' hoist, double cage material elevator, power driven mortar mixer and the water-cooled engine.

The C. H. & E. portable saw rig is shown in seven models. These machines comprise both all-metal and wood frame saw rigs and all except the No. 5 machine, which is a rapid cut-off saw, have the gasoline engine mounted within the frame, forming a complete, self-contained unit. The ripping capacity of these machines varies up to six-inch lumber and the gasoline engines are of 3, 4, 5 and 6 horse power, depending upon the size and capacity of the rig.

This folder is a useful guide to the contractor or builder who contemplates the purchase of new equipment and who wishes to investigate the high-grade line of machines marketed by the C. H. & E. Manufacturing Company.

✱ "Trouble-Savers" On the Job

One of the important steps which have been made in the manner of erecting frame buildings is the use of compact, strong, easily-erected scaffolds. The steel scaffold bracket is responsible for a great improvement in building methods. Contractors and builders can no longer afford to spend a great deal of time in erecting clumsy wooden scaffolding. Waste must be eliminated and every device which will cut down the time required to erect a building or increase the amount of work which each man on the job is able to do in a given time must be taken advantage of.

The steel scaffold bracket is surely one device which can accomplish the desired purpose. It is easily and quickly put into place and when once secured in position it forms a solid support for staging which gives the men on the job confidence, resulting in faster work. There are other advantages. Since steel brackets are made to fold up, they occupy little space when not in use. They may be taken from one job to another easily, along with the other equipment, and not as a separate load, as clumsy, non-collapsible wooden brackets must often be carried. The steel brackets may be given a great deal of abuse without showing its effect and when once placed in service they are there to stay for a long period.

One type of steel scaffold bracket which has given a great deal of satisfaction among contractors and builders is called the "Trouble-Saver." It is a two-legged bracket which effectively prevents side motion. Scaffolds built with "Trouble-Savers" are solid. Read what one carpenter and builder has to say about them:

Willoughby, Ohio, Sept. 23, 1916.

The Steel Scaffolding Co.,
Evansville, Indiana.

Enclosed please find check to cover cost of "Trouble Saver" brackets you sent me. In regard to your brackets would say that the same are perfectly satisfactory in every respect and are all that you claim for them such as time and trouble savers and that they make the most solid staging that I ever was on. I do not wonder that you put them out on trial, as to use them once is not to part with them and anybody that wants their men to feel safe upon a scaffold cannot afford to be without them, and I will take pleasure in recommending them to anyone who is interested in safety first.

(Continued to page 118.)

WANT THE BEST LONG-LEAF PINE THAT GROWS?

"THERE'S A DIFFERENCE"

Specify "Bogalusa"

Appreciate that the name "Bogalusa" branded on every stick we make means "Automatic Safety for the Buyer"?

Insist on "Bogalusa"

Realize that the Strongest and Every-way Best Structural Wood in the World's Markets is Our Own Native Product, and that "BOGALUSA" is the symbol of the very best of

True Long-leaf Pine

"THERE'S A DIFFERENCE"

(Dependable Dimension Stock—Heaviest Structural Timbers—Every Piece Identified)

Particular about integrity of Manufacture, Grading and Count? Understand the value of "every foot a foot?" For positive assurance of satisfaction simply state that every stick must be

Guaranteed by the name, "Bogalusa"

The Great Southern Lumber Company, operating the largest plant in the world, places its entire responsibility and resources at your command when you put a "must" on your order—

Don't ask for "Bogalusa"—
Tell them: "Bogalusa!"

"THERE'S A DIFFERENCE"

Drop a card for *Bogalusa Book*, free. Address Dept. 7, Great Southern Lumber Co., Bogalusa, La.

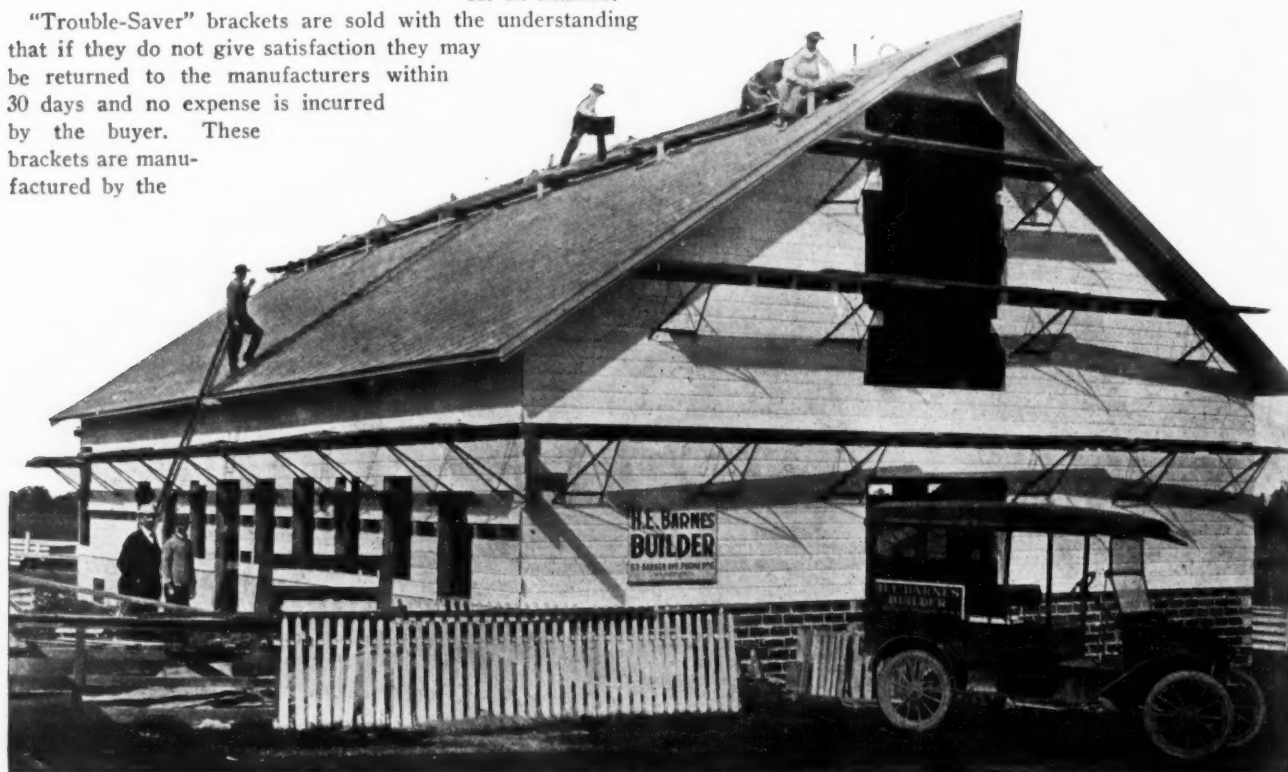
WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

And I further would state that this testimonial is unsolicited and you are free to use the same if you care to.

I am, very truly yours,
H. E. BARNES.

"Trouble-Saver" brackets are sold with the understanding that if they do not give satisfaction they may be returned to the manufacturers within 30 days and no expense is incurred by the buyer. These brackets are manufactured by the

Steel Scaffolding Company, of Evansville, Indiana. Full information may be obtained from this company.



A Clean-Cut Barn Job on which Mr. H. E. Barnes, Willoughby, Ohio, Used "Trouble-Saver" Scaffold Brackets to Advantage.



PANORAMA OF PLANT OF KAUL LUMBER CO., KAULTON, ALA.

A Word About *KAUL* ^{IND} YELLOW PINE

THE trade-marking of a manufactured article is a thing not to be lightly undertaken; a valuable aid to merchandising when properly used, a trade-mark will surely prove a boomerang unless it is backed by wide experience and accurate knowledge of trade requirements, by the ability and facilities to meet these requirements, and by the strength of character to hold to the mark of quality when established.

All that thirty years continuous experience, a fine quality of timber, modern manufacturing facilities, and expert supervision, can do to produce a perfect article, is reflected in the SOUTHERN YELLOW PINE products which bear our trade-mark, and which we offer on their merits to contractors and builders through the retail lumber dealers of the country.

Ask your Dealer for "The Kaul Kind"

KAUL
LUMBER
CO.
BIRMINGHAM ALA

Arkansas Soft Pine

is a non-resinous interior finishing wood of close, tough fiber, fine grain and wide variety of figure. In physical make-up it does not in any respect resemble what is commonly known as "Georgia Pine."

It lends itself readily to stains which are applied direct without preliminary shellacking. Treated as dark mahogany, this wood rivals the genuine in beauty of texture and finish.

It is the ideal base for white enamel. due to the absence of rosin, a quality which insures against discoloration. Moreover, no trouble will be experienced from raised grain.

Because of an abundant supply, Arkansas Soft Pine is readily obtainable and at a price notably less than that of rarer finishing woods of no greater durability or artistic value.

ENAMELED AND STAINED SAMPLES TOGETHER
WITH ARCHITECTS MANUAL FREE ON REQUEST

Look for the Trade Mark at your dealers

Arkansas Soft Pine Bureau

912 Bank of Commerce Building
Little Rock, Ark.



WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

Mr. Contractor-Carpenter

Write today—now for the best agency "try-out" proposition for the largest and most complete line of

METAL WEATHER STRIPS

on the market.

Turn Your Idle Hours Into Money

We supply you with a complete agent's outfit, consisting of models, estimating tables, contract blanks, advertising matter, etc.

We don't ask you to invest a dollar of your money until you get actual orders, and we show you how to get them at a good profit.

We give exclusive agency to the ones who "make good."

We give full instructions for installation.

Many contractors have taken up this business as a side line and developed it into their main business. You can do the same.

We Have Some Excellent Territory Still Open

ADDRESS

The Diamond Metal Weather Strip Co.

626 KERR STREET
COLUMBUS, OHIO

There is nothing complicated about

Almetal Weatherstrips

Old, sunken, warped and out-of-square openings of every kind made dust and draught-proof.

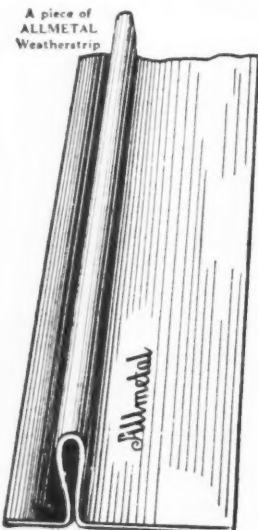
Easier to Install

This pattern is used more than all others combined.

Easier to Sell

This kind made metal weatherstripping a business.

A piece of
ALLMETAL
Weatherstrip



Ask any Architect

Noiseless, easy-running, non-rattling sash; better than storm sash; absolutely permanent; sash instantly removable for repairs; coal saving pays the cost; solid comfort with a smaller heating plant.

Are You the Man?

We guarantee a money-making business for a live carpenter or builder who will follow our selling plan.

• Answer Quick and get
our inside price list

Almetal Weatherstrip Co.

224 West Madison Street
CHICAGO, ILL.

Con-Ser-Tex Canvas Roofing

For many years architects, contractors, builders and manufacturers have been endeavoring to solve the problem of securing a permanent, durable, attractive, economical roofing material which would be easy to install and which would render satisfaction to the owner.

The increasing demand in modern homes for sleeping balconies and the popularity of bungalows and homes of semi-bungalow construction, offer a constantly increasing market for a roofing or porch covering material which will, when installed, render the necessary service.

For many years past cotton duck canvas has been used with more or less satisfactory results; the main objections, however, were that cotton duck when not treated with the best known methods of preservation would deteriorate through the action of dry rot and mildew. The usual way of protecting the canvas was by the application of ordinary house paint; but this was found unsatisfactory—due to the fact that the linseed oil contained in all paint would, in a short time, thru natural oxidation, destroy the strength of the cotton fibre.

It was also found that even the best paint procurable, on exposure to the weather, cracked or checked, and this condition permitted moisture to seep into the cotton canvas, thereby creating an ideal situation for the work of the mildew germs, and this in a short while destroyed the usefulness of the fabric as a weather-proof covering.

These conditions have been overcome—first, by manufacturing a properly constructed cotton fabric and secondly by the application of a direct chemical treatment, which coats each and every fibre with a water, oil and mildew resisting compound. As a result—Con-Ser-Tex Canvas Roofing as produced by the William L. Barrell Company, 8 Thomas Street, New York City, meets the exacting requirements of the trade.

Send for their booklet, "Roofing Facts and Figures." It will interest you.



Clever Office Display of Delco-Light

The illustration on page 122 shows a complete group of farm buildings which is being used as a display in the offices of the Davenport, Iowa, agent for the Domestic Engineering Company, manufacturers of Delco-Light electric form lighting equipment.

The barn of this group is 4 feet long by 3 feet wide and is 3 feet high. It is of a standard design recommended by the Iowa State Agricultural College. It has an extra large hay mow space and is well arranged as regards cattle stalls and feed and litter alleys on the ground floor.

The house is 30 inches by 24 inches. It is furnished completely in every room with miniature furniture and fittings, including electric fixtures, bath room fixtures, dishes, tables, chairs, piano, telephone, dressers, alarm clock and many other details. There is a flag staff, fence, garage, sanded walk and drive and rural mail box. Green grass for the lawn is painted on the Beaver Board which carries the entire group. The base is 12 feet 6 inches by 6 feet 6 inches.

The entire display was assembled by the Engineering Department of the Iowa State Agricultural College to show farmers how to build and arrange houses and barns and to encourage the use of electric light. It was shown by this department at several state fairs, the last one being the Iowa State Fair at Des Moines in September of this year.

The Delco-Light plant is a self-contained system consisting of gasoline engine, electric generator and switch board built and mounted in such a way that very little space is required

(Continued to page 122.)



We are all in the Same Business The Building of Better Built Homes

As makers, merchants and builders we have but one and the same customer and that is the family whose home we build.

If that home is to be the better built kind we three must stand together in the service we give.

You come into personal touch with the home builder in the discharge of your duties, but our responsibility is not less than yours. We must render our service by making it possible for both dealer and contractor to render theirs.

Curtis Service is broader than material, workmanship and delivery, although these are of prime importance.

Every piece of material is carefully selected and continuously inspected throughout every step in its manufacture. A final inspection is made just before it is trademarked.

Every bit of fitting and finishing that can be

done at the factory is done. Stairs are more than just material—they are stairway material, all completely machined—ready to put in place. All house bills are sanded. Remember, it costs \$50.00 to use 75 cents worth of sandpaper.

Curtis woodwork is delivered in the order you want it and on the date you want it.

By recommending Curtis woodwork you insure yourself satisfied customers. Because they know it is the quality trademark, they will know you are guarding their interests.

Let us, then, who are in the same business with the same ideals, get better acquainted. Just send us your name and tell us what part you play in the better built home movement.

Let us tell you about Curtis Woodwork and Curtis Service. Write today.

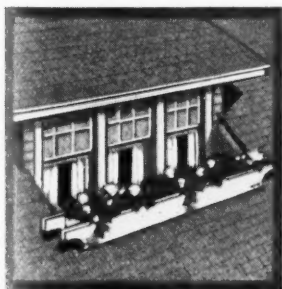
THE CURTIS COMPANIES, SERVICE BUREAU, ¹³⁹⁵⁻¹⁴⁹⁵ SOUTH CLINTON ST. **Clinton, Iowa**

Manufacturing and distributing plants at

Clinton, Ia.; Sioux City, Ia.; Wausau, Wis.; Minneapolis; Chicago; Oklahoma City, Okla.; Lincoln, Neb.; Detroit; Topeka, Kans.
Eastern Offices at Pittsburgh and Washington

The Makers of CURTIS Woodwork Guarantee Complete Satisfaction to its Users.

"We're Not Satisfied Unless You Are."

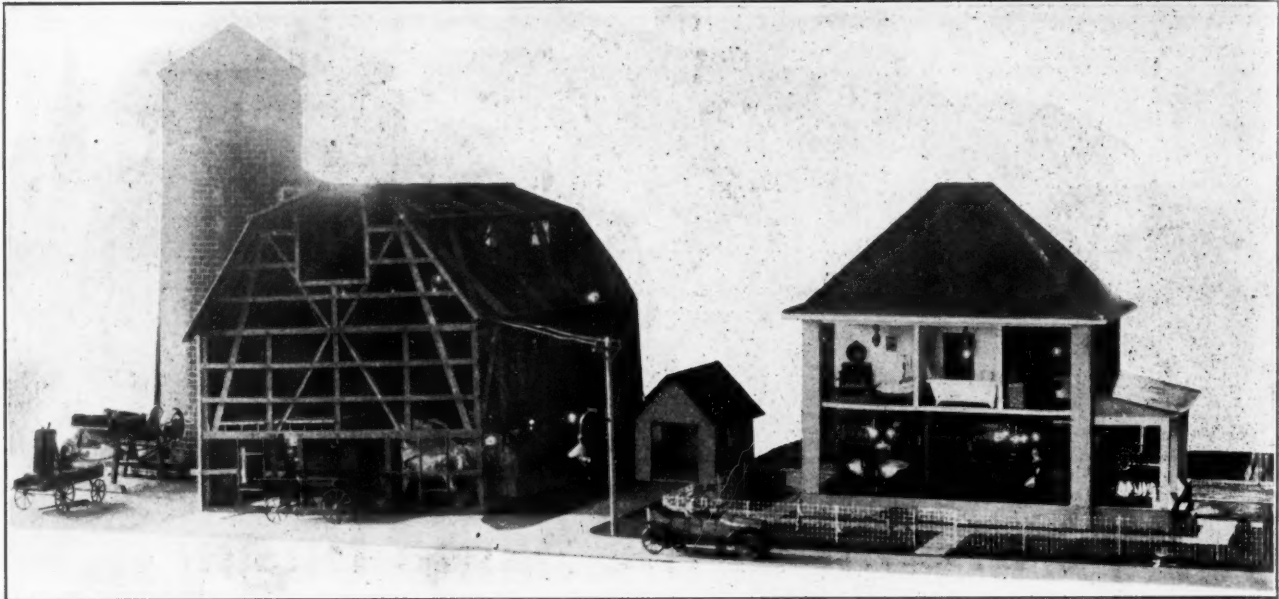


1866
CURTIS
WOODWORK

"The Permanent Furniture for Your Home"



WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER



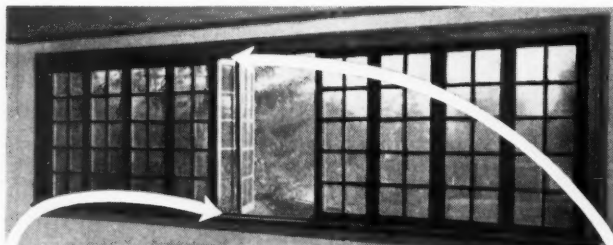
A Model Farm Group Fitted with Delco-Light and Used as a Display in the Office of J. S. Kimmel
Davenport, Iowa, General Agent for Delco-Light.

for its installation. There is a storage battery used in connection with the generating plant which is furnished as a part of the equipment.

The system is easy to install and operates automatically. It starts by pressing a switch and stops automatically when the battery is fully charged. It furnishes 40 to 50 lights for

the house and barn and provides power for churn, cream separator, pump, washing machine and other equipment.

Readers who are interested in farm building should know the merits of the Delco-Light system. The Domestic Engineering Company, Dayton, Ohio, will furnish interesting information to those who desire it.



Make them Stormproof!

INSTALL the windows in the homes and buildings you put up with Whitney Casement Window-Hardware.

"What, casement windows in every room of a house?"

Yes, sir—if they're installed with Whitney Casement Window-Hardware, they're more practical and satisfactory than the ordinary sliding windows, they afford greater protection against cold and storms, they're absolutely tight, no rattling, leaking or sticking. Then think how distinctive, artistic, and "homey" they look. Use any style sash. We sell only the patented hardware.

Write for information and interesting portfolio.

If west of Mississippi, address
Whitney Window Corp'n,
309 S. Fifth St.,
MINNEAPOLIS, MINN.

If east of Mississippi, address
H. E. Holbrook Co.,
446 John Hancock Bldg.,
BOSTON, MASS.



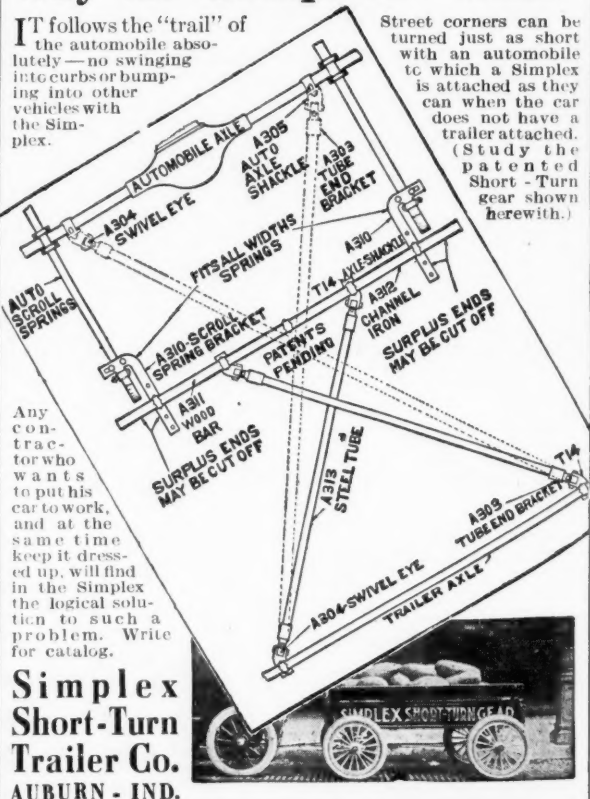
WHITNEY
CASEMENT
WINDOW HARDWARE



Why the Simplex "trails"

IT follows the "trail" of the automobile absolutely—no swinging into curbs or bumping into other vehicles with the Simplex.

Street corners can be turned just as short with an automobile to which a Simplex is attached as they can when the car does not have a trailer attached. (Study the patented Short-Turn gear shown herewith.)



Simplex
Short-Turn
Trailer Co.
AUBURN - IND.

Woods and Their Uses

ALL woods have certain uses for which they are especially adapted by reason of the peculiar qualities and characteristics which nature has given them; and on their proper selection for these uses, hinges the whole problem of economy in wood construction.

Three centuries of experience in this country have demonstrated that no other wood lasts so long or gives such satisfactory service as

WHITE PINE

for outside finish lumber—siding and corner boards; window sash, frames and casings; outside doors, door frames and casings; outside blinds; all exposed porch and balcony lumber; cornice boards, brackets, ornaments and mouldings; and other outside requirements, *not* including shingles.

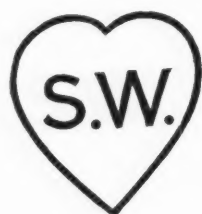
If the lumber dealers supplying your clients are at any time unable to furnish it, we should appreciate the opportunity of being helpful to you in securing it.

A Free Magazine for Contractors

We are now publishing a bi-monthly architectural magazine, every issue of which is full of valuable and helpful information for contractors and builders. If you would like this magazine, write us and we will be pleased to place your name on our mailing list.

WHITE PINE BUREAU,
2235 Merchants Bank Building, St. Paul, Minn.

Representing
The Northern Pine Manufacturers'
Association of Minnesota, Wisconsin
and Michigan, and The Associated
White Pine Manufacturers of Idaho



Fifty Dollars for the for Hanging Every Door



**3
Butts**

Those who know, appreciate the fact that to be hung properly, a door must be hung on **THREE BUTTS**.

EXAMINE the doors you pass through today. Note how some stick, warp, creak and bind.

What, in your judgment, would three Butts do to remedy this?

Write the **STANLEY WORKS** your reasons. We will give you twenty-five dollars if you submit the best reason, ten dollars for the next best, five dollars for the next, and three dollars for the three next best "Three Butts" reasons.

What we want is a brief article giving one or more reasons for hanging every door on three butts instead of two. Send in as many reasons as you wish. This isn't a competition in English composition, but in reasons for hanging every door on three butts. It is your *ideas*, rather than your

way of expressing them, which will win a prize.

Think over the subject carefully today and write your letter tonight. You may have just the reason that will win the twenty-five dollar prize.

the Best Reasons Door on Three Butts



Rules for the 3-Butts Prize Contest:

- 1—This contest is open to anyone.
- 2—Any contestant may submit as many arguments as he wishes, although a contestant can win but one prize.
- 3—All articles submitted become the property of THE STANLEY WORKS.
- 4—Fifty dollars in cash prizes will be offered. A prize of twenty-five dollars for the best article submitted, ten to the next best, five to the next best, and three to each of the three next best.
- 5—Address all articles submitted for this Contest to the Advertising Department of The Stanley Works, New Britain, Conn.
- 6—Write your article on only one side of a sheet of paper. If there is more than one sheet, pin the sheets together carefully.
- 7—Write your name and address on the reverse side of each sheet of paper.
Contest closes

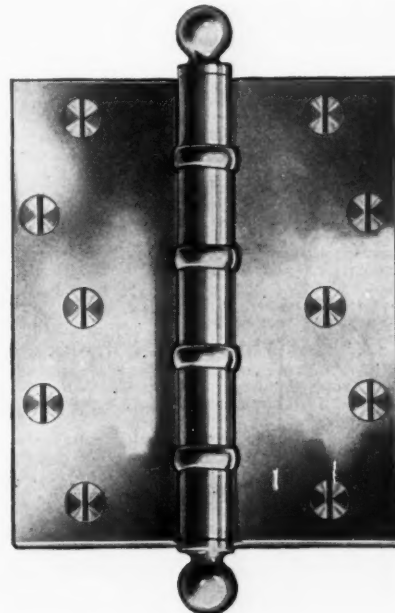
IT is the **weight** rather than the **dimensions** of the door that determines the size of the Butts on which it should be swung. Note the following table:

DOORS—

Cupboard	three 2½" Butts
Under 30 lb. weight	three 2½" Butts
30 to 50 lb. weight	three 3½ x 3½" Butts
50 to 60 lb. weight	three 4 x 4" Butts
60 to 75 lb. weight	three 4½ x 4½" Butts
75 to 100 lb. weight	three 5 x 5" Butts

*Stanley Ball-bearing Butts
give perfect service and
indefinite wear.
No oiling necessary.
Non-rising pins.*

Stanley Works
New Britain, Conn., U.S.A.



New York
100 Lafayette Street
Chicago
73 East Lake Street

Bargain for the Contractor

Let me send my offer on this "Contractor's Typewriter"

It is a visible writer—just the machine you need—specially designed to meet the exacting requirements of your business.

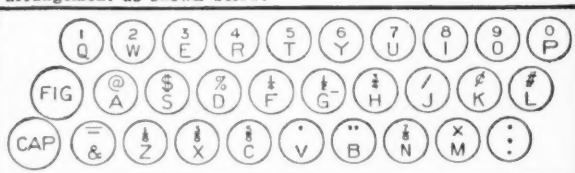
It is easy to operate, you can learn to operate it in 10 minutes.

It requires no care, it will do your work for a lifetime. We guarantee it. It is the latest Model 5, with inbuilt Tabulator and Back-spacer.

This Contractor's and Material Man's Model has Keyboard arrangement as shown below.



No. 5 OLIVER



Note carefully not only the fractions and figures, but characters used in Bills of Material, etc., are all on one shift, such combinations as: "400' % x 4 x 16' @ \$30.00 = \$12.00" reproduced with one operation of the shift key.

The automatic tabulator makes this exacting work as easy as letter writing. Just press the button and the paper automatically glides to the correct spot so that quantities group themselves under quantities, dimensions under dimensions, prices under prices, etc.

Think of the enormous advantage of the typewritten estimate. Think of the enormous saving of tedious labor. Then remember that this special Contractor's Model is also ideal for ordinary correspondence and the many other uses to which a typewriter can be put.

Free Trial—Nothing Down

My offer is to send this typewriter to you, that you may decide by actual trial whether or not you desire it. No advance payment is required and you assume no obligation.

Cut Price—Terms 13c a Day

I will make you an extremely low price on this machine. A price that has never been made on a typewriter of this quality.

No advance payment is required. If you decide to keep the typewriter, you can pay a little each month, about 13 pennies a day.

No interest, no extra charges, no chattel mortgages, no red tape—everything is made easy.

Get This Free Information

It will not cost you anything to learn about this offer. Just send your name and address and I will send you full particulars. No salesman will call on you, you will not be urged to buy.

Do it now. I have but a limited number of these "Contractor's Model" of the Oliver, and if you have any need for a typewriter do not neglect to send for this best of all typewriter offers. A coupon is attached for your convenience. For your own advantage mail it today.

Yours very truly,

Typewriters Distributing Syndicate
Dept. 3139, 1510 Wabash Ave., Chicago

Mail this for All the Facts

Typewriters Distributing Syndicate,
Dept. 3139, 1510 Wabash Ave., Chicago.

Gentlemen: With the understanding that I am not purchasing anything or obligating myself in any way, you may send me your bargain offer on "Contractor's Model Oliver."

Name

Address

Goodwill and Business Building for Dealer and Contractor

(Continued from page 49.)

real estate. Contractors and building materials dealers are also specialists, but in quite different lines. If the materials dealer and his contractor friends were in close touch with local real estate operations, they could not only build structures, but build business.

There are community improvements needed or under way everywhere. Cement is the only road building material that is obtainable in practically every town in the country. There are many cement dealers and contractors who jointly have not only boosted for good roads, but have sold the cement and done the construction which has resulted in permanent roads. There is no reason why the carpenter-contractor should not be an all-around building contractor, and so a concrete contractor, at least in a limited way. For every reason that might be cited against, there are perhaps a score in favor.

Ideas as to building are rapidly being reconstructed. This is especially true of farming communities. The business farmer today wants a modern home and all appointments that mark it as such. Sanitation on the farm calls for concrete feeding floors, concrete septic tanks, concrete dairy buildings and at least a concrete foundation for the basement under the residence. The progressive man of today is not likely to thank you for recommendations in the building line that attain ends below the standard set by living conditions today.

—Chicago.

J-M Transit Asbestos Shingles Weather the Cyclone

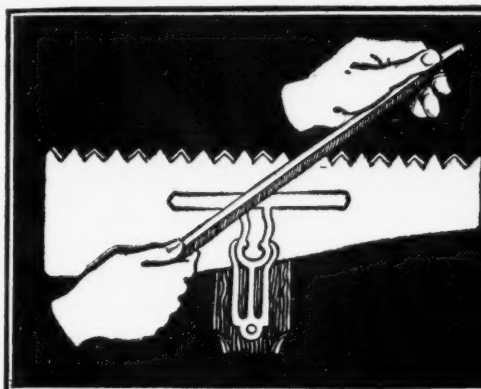
On Sept. 28, 1915, a tropical storm swept over the south. Practically every roof in New Orleans and vicinity had some damage done, either a chimney blown on the roof, part of the roofing removed, guttering blown off, sky-light blown in, or the total unroofing of a building. The storm was of such severity that New Orleans was without wire communication to the outside world for about four days. The maximum velocity was 120 miles an hour.

P. C. Authement of Lockport, La., had just built a house and his roofing was J-M Transite asbestos shingles. Altho the storm started at 2:00 P.M. and lasted until 10:30 that night, and altho practically every building in the city and vicinity was affected, Mr. Authement's roof was entirely free from damage. His roof was as good as the day it was put on.

Building Material Interests Lining Up For New York

A movement for better building of which the Complete Building Show of Cleveland last February was an important effort, is to be given impetus in the East when the National Complete Building Exposition is held at the Grand Central Palace March 5-11, 1917. While the Cleveland show was the first of its kind ever held in the country and was patterned liberally after the Building Trades Exposition, London, England, it was in a sense, experimental. The fruit of this experience will show itself in the New York Exposition next March, and assurance is given by the interests promoting the show that it will be larger and better in every way.

(Continued to page 128.)



Comparative Length
of Strokes of —
Expert's Choice File
and of a —
six inch File

The Expert's Choice File

Does twice the work
of the ordinary file
— in half the time.

Figure this out:—

How much of your time is worth 25 cents? How long does it take you to file a saw with an ordinary file? By cutting your filing time in two, and still enabling you to file twice as many saws, the **EXPERT'S CHOICE** increases the value of your time by over 50%. By spending 25 cents you can make it back on your first filing job alone.

It's in the Quality—in the cut of the tooth and in the length of stroke

Frank Luther, Chicago, says:

"The Expert's Choice file, files 18 hand saws and is cheaper at a cost of 50 cents than the ordinary file at any price."

Delta Hand
Saw Files
Can be found
at the best
tool stores at
prices quoted
on this card

"THE HIGHEST GRADE FILE MADE"
DELTA "HAND SAW" FILES



CARPENTER'S SPECIAL

15¢
EACH

MECHANIC'S FAVORITE

20¢
EACH

EXPERT'S CHOICE

25¢
EACH

DOES TWICE THE WORK IN HALF THE TIME

THE FILE YOU WILL EVENTUALLY USE



A
Trial will
Convince
You

Look for This Sign at Your Hardware Store

You get your money back if the Expert's Choice does not prove to be the most economical file you have ever used.

DELTA SAW FILES are made for fine or coarse teeth also for that extra hard saw.

BUY YOUR TOOLS of the **DEALER** who sells **DELTA FILES**. HE is a quality MAN.

TRIAL OFFER

If your dealer cannot supply you, send us 15c, 20c or 25c for trial file, sent prepaid. Do this today—find out what a real file is.

DELTA FILE WORKS, Philadelphia, Pa.



This Exhibit, Shown at Complete Building Show of Cleveland, Indicates High Grade Work Brought Out in the First Exposition.

This is to be an exposition of all kinds of building materials and equipment. It further embraces construction methods, architecture, engineering, landscaping and garden accessories.

While the departments devoted to home building and home comforts will be very much more extensive than in the Cleveland show, the extended space in the Grand Central Palace permits of the addition of complete departments for commercial and industrial building. There will be special sections devoted to church and school architecture and construction, a machinery exhibit of special interest to the

trade, and a number of elaborate community exhibits, showing the practical use of various materials installed by associations.

Among the national organizations that are already subscribers to space in the New York show are: Southern Pine Association; The Arkansas Soft Pine Bureau; the Gum Manufacturers' Ass'n; the National Lumber Manufacturers' Ass'n; North Carolina Pine Ass'n; Seattle Cedar Lumber Ass'n. Negotiations are on with the big brick, tile, cement, metal

(Continued to page 130.)

WATERPROOF PLASTERGON TREATED WOOD-FIBRE WALL-BOARD

(See how this 10-foot panel stands straight without bending! Send for actual photo.)

Better Profits

Your profits on a wall-board job depend not alone on the first cost of the board—but its cost to you in handling—and its cost to you in reputation if you make a bad choice. Be safe. Use Plastergon. Our users say, "Plastergon has no equal at any price."

Your Safeguard in Buying (No. 6)

"We have just unloaded the third shipment you have made us of WATER-PROOF Plastergon. We have received no complaints and we are able to get more money for it than for the old board which was not waterproof."
GEO. G. KENYON LUMBER CO.
Syracuse, N. Y."

Samples and our "Contractors' Practical Working Guide" sent free. Send the name of your Lumber or Builders' Supply Dealer. Write today.

Plastergon Wall Board Co.
No. 1 Philadelphia Ave., Buffalo, N. Y.



Have You Made The Mistake

of thinking that Compo-Board is the name for any composition wall board?

Have you overlooked the fact that the genuine



Trade Mark Reg. No. 94745

is made with a center core of the kiln-dried wood slats—is the only wall board so made—and as a result of this unique patented construction possesses a strength, durability, cold, heat and moisture-resisting quality, decorative adaptability and other features that made it far more satisfactory than lath and plaster or other wall boards?

Do you know also that it does not have to be paneled, because it saws with such smooth edges, and that it is so stiff it can be papered? Thus two of the greatest objections to giving up the traditional lath and plaster are overcome.

If you would be modern in your ideas about building, you owe it to yourself to get acquainted with Compo-Board. Write for free samples and interesting book.

The Compo-Board Company

5777 Lyndale Ave. No.

Minneapolis, Minn.

"I Am the Neponset Man"

"They called me that at first to jolly me.

"They didn't believe I had shingles that couldn't crack, rot, rust or rattle loose.

"But now the name Neponset is my capital. The first job where I used

NEPONSET TWIN SHINGLES

(Pat. applied for)

broke the ice for me. That one job led to a second, and the two soon became four. And so my business grew.

"Every one of these red and gray roofs here in town is mine. And many of the others, too, for I got a reputation as a roofer on account of my success with Neponset Shingles."

The same materials are used in Neponset Shingles as in the well-known Paroid Roofing. Neponset Wall Board, Neponset Waterproof Building Paper and Neponset Floor-Covering are other well-known Neponset products.

We want a carpenter in your town to be known as the "Neponset Man." Will you be the one? Send coupon today for particulars.

BIRD & SON, (Established 1795) Dept. C, East Walpole, Mass.

New York

Washington

Chicago: 1434 Monadnock Bldg.

Canadian Office and Plant: Hamilton, Ont.



Why Not Make Every Room Habitable?

Almost every home builder economizes somewhere. Often a room is left unfinished. In such a case you can give that extra bit of service that is so well appreciated.

Recommend that it be finished with

NEPONSET WALL BOARD

There are two finishes to choose from, and both are waterproofed to prevent warping.

If you do not know Neponset Wall Board you cannot know the possibilities that lie in this substitute for lath and plaster. Full information upon request. Write today.

COUPON



BIRD & SON, Dept. C, East Walpole, Mass.

Please send me full information about the Neponset Shingle and Neponset Wall Board. Also a copy of your book "Repairing and Building." This request, I understand, does not put me under any obligation whatsoever.

Name.....

Address.....

COUPON

WHEN WRITING ADVERTISERS, PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER



Shut Out the Cold with BEAVER BOARD

Possibly you don't appreciate that in addition to its beauty and its ease of application, Beaver Board makes warmer rooms than lath and plaster.

To prove it place your hand on a Beaver Board wall. Not a suggestion of chill. The plaster wall, on the contrary, is cold and clammy.

Beaver Board offers the same resistance to summer's heat. It resists sound and fire, too. There are many other things which every builder ought to know about Beaver Board. Write for booklet and further information.

THE BEAVER BOARD COMPANIES
570 Beaver Road, Buffalo, N. Y.
Branches in Principal Cities



"You can't expect Beaver Board results unless this trademark is on the back of the board you buy."



Hit the Nail on the Head

with your clients by omitting lath and plaster from your next job and using only

CAREY
Ceil-Board
SUPERSEDES PLASTER FOR WALLS AND CEILINGS

Your big profit comes from the fact that your least expert labor can apply it quickly and perfectly, making a beautiful and permanent job without any of the delay, inconvenience or dirt of plastering. Plain or natural wood finishes. A pair of hands, a claw hammer and some nails are all the tools required.

Write for samples and handsomely illustrated booklet

The Philip Carey Company
1021 Wayne Ave., Lockland Cincinnati, Ohio



lath and gypsum associations with a view of having these industries demonstrate their respective materials. Spaces have already been sold to numerous individual manufacturers, including all the structural materials, heating appliances, safety devices and building equipment.

The purpose of the show is wholly educational. It is the aim of the promoters to bring to New York during this exposition a great number of trade conventions whose delegates will be the guests of the show. An important architectural competition will be held and the drawings submitted by architects and contractors throughout America will be placed on exhibition at the show.

Co-operation of the real estate men of Greater New York is given by their furnishing a number of building lots that will be awarded as prizes to the visitors. A strong appeal will be made to the prospective builder with a view of showing him the more modern uses of all materials and equipment. The exhibits will suggest the beauty, convenience, safety and utility of all manner of buildings, from the garage to the skyscraper. The Grand Central Palace is situated within a trolley ride of seven million people. New York being the largest building center in the world, and the time of the show just preceding the actual beginning of 1917 building operations, it is believed, by the managers of the show, that the exposition will exert an important influence upon the building of the New York district and the East during the coming years. The effect of the Cleveland show is seen throughout the Middle West in the past season's operations. The exhibitors of the Cleveland show are unanimous in expressing their satisfaction at the direct results coming out of their participation in it.

The exposition is maintaining a western office in Cleveland with its main office in the Grand Central Palace, New York. At least two floors of the Palace will be filled with exhibits constituting by far the largest exposition of this kind ever held in this country.



"Classik" Steel Ceilings Stamped Under 900 Tons Pressure

Manufacturing methods are constantly changing. Inventive minds are continuously at work and what today might seem to be the highest point of manufacturing efficiency is obsolete a year or so hence.

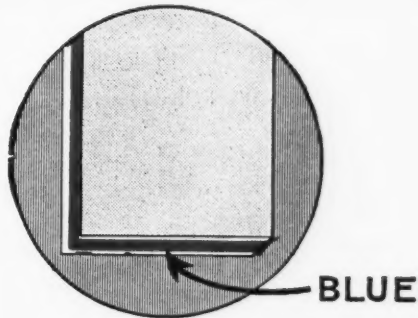


One of the Beautiful "Classik" Designs.

For years, the majority of steel ceiling manufacturers used the drop hammer method of stamping the steel sheets.

It remained for The Berger Manufacturing Company, Canton, Ohio, manufacturers of "Classik" ceilings, to produce a more logical method of manufacture. The inventive mind

(Continued to page 132.)



"Not One Complaint to Two Million Feet Sold and Used"

The dependable Wall Board with the BLUE CENTER will satisfy your customers

The color in itself doesn't mean a blessed thing. When we created the colored center in wall board five years ago, instead of blue we could have used pea-green or salmon-pink, so far as affecting the quality of the board was concerned. We didn't use color to hide old, re-worked materials or cheap, dirty fibers. Upson Board is, and always has been, made only of highest-grade, pure wood fibers. Nor did we use cheap, smudgy dyes which may blacken or stain the floors when the sawdust cuttings are tracked 'round. The fact is, we originated the idea of a wall board with the distinctive construction of two light-colored faces and colored center, simply as a ready means of identification and protection to buyers. There is no physical reason that we know of for making any board with a colored center —no reason that we know of, in fact, unless it is to approximate the construction of dependable Upson Processed Board.

It is what the color STANDS FOR that counts. The BLUE Center means that you are not getting a mere imitation of another board. The BLUE Center is the mark of genuine UPSON PROCESSED BOARD:—

- the first hard, stiff and wood-like board.
- the first 4-ply, 5-ply and 6-ply board made.
- the first board to look, feel and work like lumber.
- the first KILN-CURED board.
- the first WATERPROOFED board.
- the first SURFACE-FILLED board.
- the first board with a smooth, lintless surface, practically free from bumps and lumps and fuzz.
- the first board to be made in a 64-inch stock width.
- the first board to be made of high-grade ground wood and chemically treated wood fiber.

THE BOARD WHOSE MAKERS ORIGINATED NEARLY EVERY WORTH-WHILE IMPROVEMENT AND INNOVATION IN WALL BOARD DURING THE PAST FIVE YEARS.

Upson Board is the board that stands squarely on its RECORD. Not one complaint to two million feet sold and used! —and used in every form of building construction, including some of the most important building jobs in the country. On factory walls and ceilings it has withstood the vibration of heaviest machinery. In theaters and public buildings, it spans the widest ceilings. It is used in residential mansions and modest garages, too.

It is the wall board that has proved to the carpenter and builder that there IS a DEPENDABLE wall board—quick and easy to install and giving lasting satisfaction when it is installed. The wall board that boosts instead of harming his reputation; and that has built up a fine, all-the-year-round business for many a man. It has been and is specified by many prominent architects as the ideal interior lining. It is indorsed and used by many contractors as the most economical and altogether satisfactory lining to be had anywhere.

The BLUE CENTER is important because it stands for YOUR PROTECTION. We originated it so that you could instantly identify Upson Processed Board and be fully protected against imitations. For this reason, too, we were obliged to go to law and have Upson Processed Board legally established as the one wall board that has a right to the blue center.

DO NOT BE CONFUSED by imitations made to look "like Upson Board." If a board hasn't the BLUE center, it isn't genuine Upson Processed Board. Upson Processed Board is made good to make good. It is honestly made and honestly sold on its own merits and we are proud to attach our own name to it. Send for free booklet, samples and full information.

UPSON^{PROCESSED} BOARD

The most dependable Wall Board made in America



The Most Completely Equipped Wall Board Factory in America

THE UPSON COMPANY

Fibre Board Authorities
LOCKPORT, N. Y.

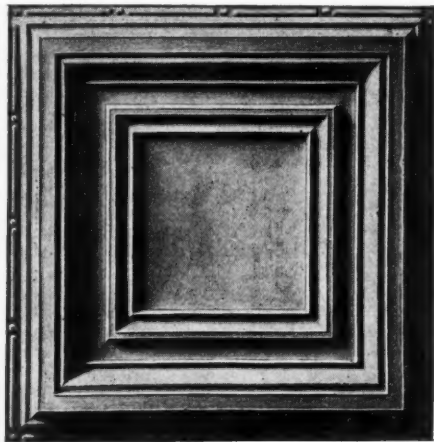
Name.....

Address.....

The Upson Company,
1 Upson Point,
Lockport, N. Y.
Send me, without
cost or obligation, Up-
son Board Samples, lit-
erature and complete in-
formation.

LOOK FOR THE FAMOUS BLUE CENTER

came to the fore and as a result "Classik" Steel Ceilings are now stamped on a new, original and especially designed draw press under 900 tons pressure.



Another of the Designs Stamped in the New Draw Press.

This enormous pressure assures absolute uniformity in depth, detail and size—no variation is possible. Each plate is pressed separately and is an exact counterpart of the others.

Skilled artisans are continually originating new and distinctive designs in clay and from these are made the dies from which the steel ceilings are reproduced. The "Classik" line comprises hundreds of beautiful patterns, each pattern designed to harmonize with a particular type of architecture. Twelve different types are represented—Greek, Roman, Romanesque, Gothic, Moorish, Italian, Renaissance, German

Renaissance, French Renaissance, Rococo, Empire, Colonial and a modern treatment in Stucco effects.

Another distinctive feature of "Classik" ceilings is the improved bead and button construction, which closes the joint tightly without tamping and calking. This construction is so perfect that after a ceiling is erected it has the appearance of a single steel sheet.

The beauty, safety, adaptability, durability, ease of application and reasonable cost of "Classik" steel ceilings are responsible for their extensive use in practically every type of interior.

A handsome catalog, illustrative and descriptive of "Classik" steel ceilings, will be sent to any reader on application to the Berger Mfg. Co., Canton, Ohio.



"Modern Walls and Ceilings for Residence Construction"

A book has recently been prepared by the North Western Expanded Metal Company, 903 Old Colony Building, Chicago, Illinois, to present the advantages of building walls and ceilings in buildings of any class, but in residences in particular, with metal lath. There are a number of photographic illustrations in the book which show good examples of residence construction in which Kno-burn and Kno-fur lath have been used to hold the stucco or plaster to the frame of the building. Other illustrations show vividly the advantages of using this material to prevent the destruction of decorations by cracking or streaked plaster, to prevent accidents caused by plaster falling from ceilings and to prevent animals from gnawing their way thru walls.

Several drawings show how stucco-covered walls are constructed, plaster fire stops are set in the walls and houses

(Continued to page 134.)

Residence of
Mr. John Leary,
St. Albans, L. I., N. Y.
Contractor, D. Stage Hollis

**BUILD A ROOF THAT
WILL BUILD YOUR BUSINESS**

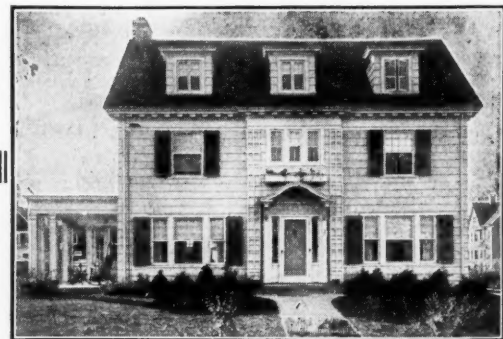
by its beauty and efficiency. Because the roof is the most prominent part of the building—exposed to flying firebrands, to storms, freezes, rains, droughts and scorching suns. Because of all these things, give your clients a roof of

**AMBLER
Asbestos Shingles**

They are made of Portland Cement, reinforced with Asbestos Fibre. Absolutely fire-proof—actually grow better under the weathering influence of the elements. They never cost a cent for repairs or painting and outlast any building. In three natural non-fading colors: Indian Red, Newport Gray, Blue Black.

Our booklets give the whole story. Write for them. If you wish samples, we will gladly send them, too.

KEASBEY & MATTISON COMPANY
Dept. B-1, Ambler, Pa., U. S. A.
See page ad elsewhere in this journal.



Architects—Shiner & Appel, New Haven, Conn. Owner—Wm. A. Thiel. Contractors—Lund & Lohne. 24" Shingles on side walls stained with "Dixie White" harmonize with moss green roof and green blinds. A better effect than wide clap-boards.

Many Prominent Architects

are making good use of 24-inch "CREO-DIPT" Stained Shingles with heavy butts for sidewall work. Save repair and repainting expense; give unusual beauty.

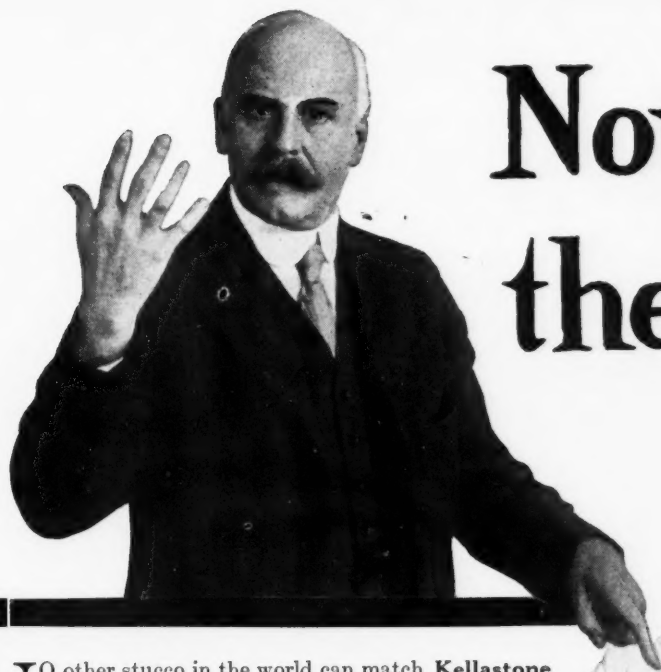
"CREO-DIPT" STAINED SHINGLES

17 Grades — 16, 18, 24-inch — 30 Colors

Preserved in creosote and stained any color desired by our special process. Selected cedar shingles—no wedge-shapes, no waste. Such shingle-quality and such even stains save expense, time, worry. They cost less than staining on the job. The open market does not afford such shingles.

Write for our Book of "CREO-DIPT" Homes and Sample Color Pad. Name of Architect and Lumber Dealer appreciated.

Standard Stained Shingle Co. 1028 Oliver St. N. Tonawanda, N.Y.
Factory in Chicago for West



Note, please, these points-

NO other stucco in the world can match **Kellastone** (Imperishable Stucco.)

In every stucco job you ever had, you were called upon to meet certain requirements common to all stucco jobs. And—in every stucco job you ever had, you had to fail in some of these requirements, unless you used **Kellastone** (Imperishable Stucco). Why? The reason is simple. Until **Kellastone** was available for you, *there was* no stucco material which *could* meet every requirement of a stucco job. The fault was not yours. Until **Kellastone**, a satisfactory stucco in *all* particulars did not exist. Note, please, the following points:

- 1st—**It's Elastic.** No normal settling can crack or check your walls—if **Kellastone** is used. It may be deflected one and one-half inches in seven feet without cracking.
- 2nd—**Rain proof**—without further treatment.
- 3rd—**Fireproof**—and keeps its beauty for all time.
- 4th—**Weatherproof**—non-conductor—it's warm in winter, cool in summer—immune to expansion or contraction.
- 5th—**Bonds perfectly** to lath, brick, stone or concrete.
- 6th—**Temperature does not affect its application**—may be applied in zero weather.
- 7th—**It's economical**—the most durable of all stuccos, yet cheapest in the long run.
- 8th—**It is the most beautiful stucco material** of all—practically any finish or color effect may be obtained with it.

KELLASTONE

IMPERISHABLE STUCCO

Upon these points you may stake your reputation as a Builder, Contractor, Architect, or Dealer with any of your customers. **Kellastone** is the proven stucco. Use it for big jobs or little—old or new. No better recommendation is needed than its use by the U. S. Government, State Institutions, railroads, large corporations, and for homes in any state in the Union.

Kellastone Composition Flooring

will fulfill your flooring needs better than any other flooring. Resists abrasion, deadens noise, and is without seam or joint, and never cracks or shrinks.

Send the Coupon Tonight for the Illustrated Kellastone Facts

The National Kellastone Co.

504 Association Bldg.

Chicago, Ill.



To Material Dealers

We have a special message to you. Thousands of Lumber and Building Material Dealers throughout the country have stocked **Kellastone** (Imperishable Stucco) and are reaping **Kellastone** profits. **Kellastone** is a staple article. Every stucco job in your community is a prospect for increased profit for you with **Kellastone**. We will show you not only how to get the stucco business in your community, but how you can create new and profitable business, with this marvelous material. Send today for special facts and information.

The
National
Kellastone
Company.

504 Association
Building, Chicago.

Send me at once Illustrated Facts concerning
Kellastone (Imperishable Stucco). I am an

....] Architect

[....] Contractor

[....] Material Dealer

Name.....

Address.....



"***** our readers *****
should write to the Flintkote Manufac-
turing Company *** so as to receive
a copy of this valuable work."

—THE NATIONAL BUILDER.

REX PRODUCTS

- It is the most complete book of its kind ever published—112 pages—over 180 illustrations—a valuable book for the architect, builder, user to have for reference.
- Complete information about all kinds of roofing,—tin, slate, steel, tile, asbestos, prepared roofings, wood shingles, asphalt shingles; full description of all our REX GUARANTEED PRODUCTS.

THE COUPON BRINGS IT

Flintkote Manufacturing Company
90 Pearl Street, Boston

NEW YORK 1102 Equitable Bldg. CHICAGO 659 Peoples Gas Bldg.
NEW ORLEANS: Hennen Bldg.

Catalog and Samples Free on Request

Name.....

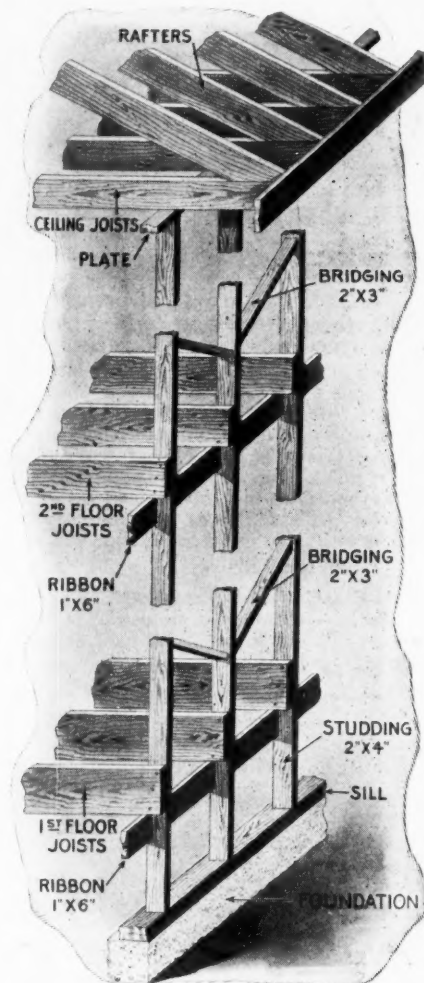
Address.....

Business.....

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

are framed when expanded metal lath is used in the construction. The illustration shown here is one taken from this book showing the construction of a frame house which is to be finished with a back-plastered stucco wall.

The studs are braced with one line of bridging between floors. The exterior faces of the studs are coated with a waterproof paint or covered with water-proofed building paper, this waterproofing being carried back to the center of the studs to prevent any moisture from coming in contact with the wood and causing it to rot. The Kno-Burn or Kno-Fur expanded metal lath is attached directly to the studs, no



Method of Framing House for Back-Plastered Stucco Finish.

sheathing being needed. In case the Kno-Burn lath is used it is necessary to use a small metal furring strip which is not needed with the Kno-Fur. The use of wooden furring strips is poor practice.

After the lath is placed, three coats of stucco are applied on the outside. Before the lath for the inside of the wall is placed, a fourth layer of Portland Cement plaster is applied to the inside of the outside lath, filling in between the studs to a depth of $\frac{1}{2}$ to $\frac{3}{4}$ of an inch. This completely covers the metal lath and protects it from moisture.

This book contains information on plastered walls in general, stucco residences, overcoated houses and stucco garages, tool houses and other small buildings which is interesting and instructive. Contractors and builders may obtain a copy of the book by addressing the North Western Expanded Metal Company.



"Here's what won me that roofing contract"

"It was a fat job—but I couldn't figure how to underbid the other fellow. Then I learned about FLEX-A-TILE Slab Shingles, and the saving in labor, freight and nails they claimed. Tried them—and found it was true! A Slab of four FLEX-A-TILE Shingles could actually be laid in the same time as one

ordinary shingle. They were **self-spacing**. They used only five nails instead of eight. I made a lower bid—and got the contract, thanks to

FLEX-A-TILE Asphalt Slab Shingles

The name FLEX-A-TILE stands for the best quality Asphalt Roofing produced—and that means the best of all roofings for durability, beauty and economy. FLEX-A-TILE Slab Shingles are a better buy for the client; cost less than a wood-shingle roof. They are a better choice for the contractor; save him time and money on the job, and stand as a lasting advertisement of his work.

FLEX-A-TILE Shingles are made to **endure**; of thick wool felt, saturated in twice its weight of the highest-grade asphalt, coated with rubbery gilsonite and surfaced with crushed slate or granite under tons of pressure.

Three styles of FLEX-A-TILE Slabs are made, in either rich red or deep green, allowing of many beautiful and varied effects in laying. The colors, being the natural stone colors, only grow richer with age.

Write for a Sample

with prices and complete information on FLEX-A-TILE Slab, Roll or Individual Shingles. Mention your business and we may be able to furnish many helpful facts. Write today.

Agencies open in some territories. Write for our offer.

THE HEPPE'S COMPANY

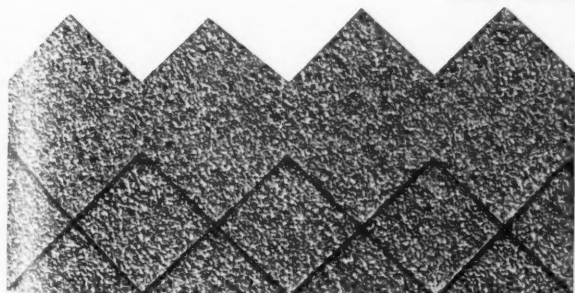
Dept. L, 1010 Kilbourne Ave., Chicago, Ill.

Flex-A-Tile Roll Shingle

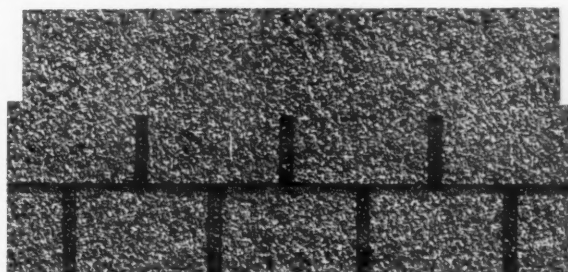
Utility Board

No-Tar Asphalt Paint

Other Guaranteed Heppes Products



**FLEX-A-TILE Diamond Point Slab,
Laid in American Diamond Style**



**FLEX-A-TILE Style 4 Slab
Laid in American Shingle Style**

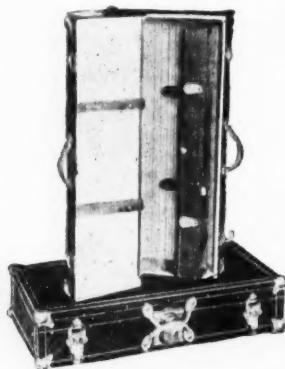
WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

Carpenter's Tool Trunk

A handy tool trunk is being made by F. Endebrook Trunk Company of St. Joseph, Missouri. The illustration shows the No. 27 carpenter's tool trunk, which is a basswood box covered with enameled iron, bronzed steel binding and fitted with brass lock and bolts. The interior is paper lined and has a drawer for small tools, arrangement for holding a steel square, level and three saws. It is built in a very substantial manner and will last a life time.

The tool trunk is a very handy possession since it may be carried like a suit case. It is neat and business-like in appearance and carries the tools in a comparatively small space without danger of damage.

This company is making a special offer as may be seen by referring to their advertisement in this issue. Any carpenter would appreciate one of these tool trunks as a Christmas gift.



The Endelbrock Tool Trunk.

The fifty plans shown in this booklet were selected from nearly three hundred drawings submitted in the Cleveland competition to show the greatest possible variety of designs and plans. Altho all designs were intended to represent dwellings having a price limit of \$3,000, including basement under the entire area of the house, average finish inside including hardwood floors, plumbing, electric wiring, hot air furnace and painting, it is doubtful if all of the houses could be built for this amount in all parts of the country.

The houses are illustrated with a perspective and floor plans; side and rear elevations, details of construction and interior views are included in some cases. There are a great many suggestions in the designs for the man who does not care to sacrifice artistic effects in obtaining a medium priced dwelling. The Complete Building Show Company is distributing these plan books at a nominal price.



A Profitable Winter Occupation for Carpenters and Builders

The United Engine Company of Lansing, Michigan, who are marketing their chemical closet thru carpenters and builders, seem to have chosen the easiest and quickest road to sales and at the same time giving a profitable occupation to those who find the winter months a slack season.

The United Chemical Closet has a number of points of merit which will instantly attract the carpenter. It is one that not only offers them a commission on the sale of the closet itself, but also enables carpenters to make a profit by installing them in homes.

There is no denying the fact that there is a great demand for this article. It brings the conveniences of the large city to the householder of the small town. Altho the United closets permit of a big profit in their sale and in the installa-

(Continued to page 138.)

"The Average Man's Home"

The above is the title given a new book containing fifty small house designs selected from drawings submitted in a national competition for the best \$3,000 dwelling, and published by the Complete Building Show Company of Cleveland, Ohio.

\$25⁰⁰ Paid for One Day's Work NEW MIGHTY MONEY MAKER!



SENSATIONAL NEW INVENTION

New, wonderful home invention, just introduced, yet half million sales already recorded. Tremendous, rapid sale staggers country. Agents happy—banking enormous profits daily. Mighty opportunity for you to get the mighty dollar. Failure impossible. Experience unnecessary. Money rolls in first hour—\$10.00 to \$30.00 daily. Amazing cash records made. Walters made \$25.00 first day; never sold goods before. Arnold, N. Dak., Carpenter, orders one, then 2 gross; sold 160 in 2 days.

Make a Clean Fortune from Unclean Millions

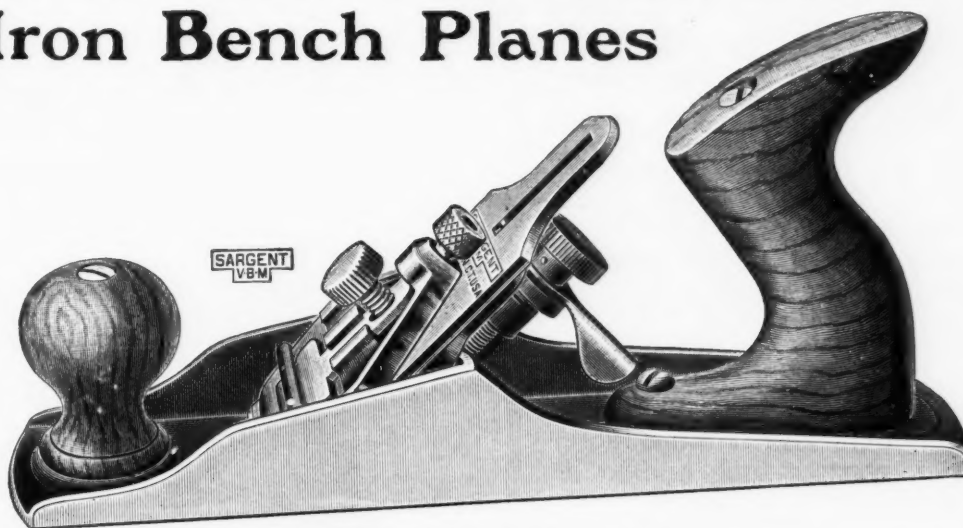
Hagen, Texas, sold 100 in two days. Webb, Pennsylvania, Contractor, averaged 10 sales per hour. O'Connell, Montana, 25 first day. Mike Bock, Minn., writes: "They are fine sellers; worked one day and sold 30." Harry Gassmann, Illinois: "Can sell scrapers as fast as I can get them. Overwhelmed with orders. Everybody wants scrapers; 100 already sold." Roy Burningham, Mass.: "Send 10 dozen. One week's work." Hundreds like these. You, too, can have money in abundance.

GRAB'S SCIENTIFIC SHOE CLEANER

Sells itself—you take orders—that's all. Every family wants one on their doorstep. Replaces unsightly, unsanitary, crude door mat. Automatically removes mud, dirt, snow from shoe in one operation. Cleans sole, sides, heel. Works like magic—sells like "sixty." Saves drudgery, time, money, shoes—saves carpets, floors. Mechanical wonder. Has 7 new patented features not found in any other scraper—10 steel blades—10 dirt outlets—twin adjustable and removable brushes—compound springs. Rotates for sweeping. Can't clog—practically self-cleaning. Handsomely enameled. Nothing else like it. Nothing so popular—so easy to sell. Selling price insignificant. You make over 100% profit. Satisfaction guaranteed. Write quick for free catalog—exclusive agency. Investigate.

SECURITY MANUFACTURING CO. DEPT. 280 TOLEDO, - - OHIO

A New and Superior Type of Iron Bench Planes



SARGENT

REG. U. S. PAT. OFF.

Automatic-Set Bench Planes

Expert mechanics, who are on the lookout for improved tools, will find in these Planes a distinct advance in woodworking tools. One tool-user has written: "I have just heard of a new self-setting Jack Plane which you have just placed on the market. It is being spoken of as the

"Best Plane Yet Out"

The superior features of these Planes, which will be appreciated by tool-users, are described below:

Automatic Set—The clamp, when replaced after removal, will always return to its original position until reset. This feature is a great time-saver. The clamp may be easily adjusted, by means of a regulating screw, close to the cutting edge when a fine cut is required, away from the cutting edge when a coarse cut is desired and may be set in as many intermediate positions as may be needed.

Rigidity—The Frog is very rigid, and the Frog and Bed at the mouth are in alignment so that the cutter has an even bearing down to the level of the cutter. The Plane combines solidity, compactness and simplicity. The meeting surfaces of the Frog and Bed are all machined so that the fit is absolute.

Ease of Adjustment—The lateral adjustment may be secured without removing the hand from the handle; and the vertical adjustment, obtained through a direct acting thumb screw at the back of cutter, is positive and rapid.

Single Bit—The 2-inch Sheffield Steel Cutter is extra heavy and requires no cap, as the clamp acts as a breaker for the chip.

Purpose—The Plane is intended for both heavy and very fine cuts. It is especially adapted for working against the grain on cross-grained hard wood where the absolute rigidity of the cutter avoids any tendency to chatter.

They are made in six sizes, as follows, with both smooth and corrugated bottoms:

Smooth Bottom	Corrugated	
No. 707	No. 707C	Smooth Plane, 7 inches long, 1½-inch Cutter
No. 708	No. 708C	Smooth " 8 " " 1½ " "
No. 710	No. 710C	Smooth " 10 " " 2 " "
No. 714	No. 714C	Jack " 14 " " 2 " "
No. 718	No. 718C	Fore " 18 " " 2½ " "
No. 722	No. 722C	Jointer " 22 " " 2½ " "

Sargent & Company

Manufacturers

51 Water St. New Haven, Conn.

12-16
AC&B

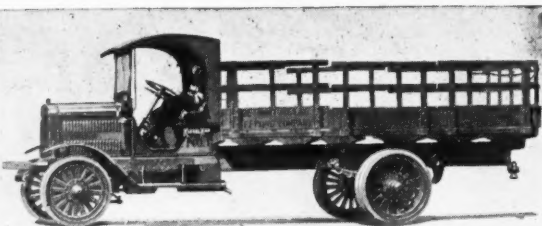
Sargent & Company

51 Water Street
New Haven, Conn.

Please send catalogue of
Planes and information about
your new Automatic-Set Bench
Planes to

Name.....

Address.....



CARPENTERS, contractors and builders are finding nothing lacking in the all-round performance of their KisselKar Trucks.

Their ease of operation, their durability and resiliency—the tremendous power of the Kissel-built engine—insure delivering and hauling more material in shorter time and at a lower cost per mile per ton.

You, too, will find KisselKar Trucks 100% efficient. Built in a range of capacity sizes that insures the exact size for you.

Send for truck information and data on KisselKar Truck performance in the carpenter, building and contracting field.

Kissel Motor Car Company
Hartford, Wis., U. S. A.

The matchless Kissel-built motor, and perfect worm drive rear axle are guaranteed with every KisselKar Truck.

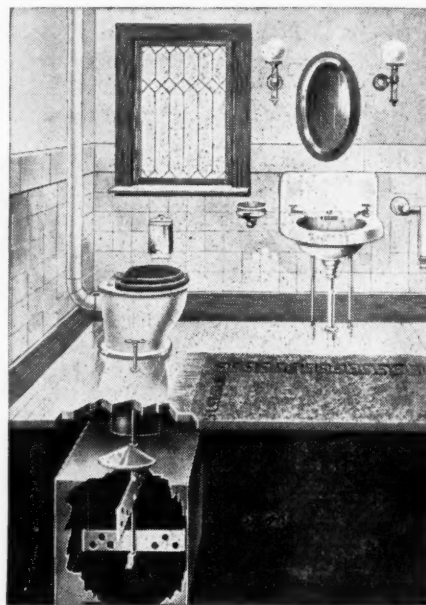
KisselKar Truck branches, display rooms and service stations in all principal cities and towns.

Six sizes from the 1500 lb. Delivery up. Chassis prices: \$950 to \$2850.

KISSELKAR TRUCKS

tion, to carpenters, the price is easily within reach of any one.

The United Company claim that the ventilating system of their closet is one of the most satisfactory of any manufactured. It is of the single vent type, and is so arranged that it eliminates pockets and dead places for foul air in the bowl. It is so efficiently ventilated that the United Company absolutely guarantees that when this closet is installed according



Showing How the United Chemical Closet is Installed.

to directions it is as free from odor and as sanitary as any water closet made.

The whole appearance of the United Chemical Closet is very neat; in fact, as neat as is found in any modern bath room. The seat is made of a select birchwood, finished in mahogany with nickel trimmings. The bowl is the same type as used in modern bath rooms, heavily enameled and finished in a select white vitreous china.

Any carpenter can easily follow the directions for installing the United Chemical Closet and do the work in a few hours. It makes a splendid business proposition which fits in nicely during the winter months when work is slack, and can also be handled in the regular building season, installations being made in new buildings, at an extra profit.

Full details of the United Chemical Closet and special proposition to carpenters and builders can be obtained by writing to the United Factory, Dept. C. C., Lansing, Mich.



Blystone Concrete and Mortar Mixers

A new catalog has recently been prepared by the Blystone Manufacturing Company, 1116 Carpenter Street, Cambridge Springs, Pennsylvania. This catalog illustrates and describes the construction and operation of the "mixer that shovels," as the Blystone open-drum mixer is called.

The Blystone mixer cannot be rightly called simply a concrete mixer because of the fact that it has successfully demonstrated its ability to mix mortar and plaster just as thoroughly as concrete. The special feature of its construction, which is credited for the flexibility in mixing which the Blystone mixer possesses, is the reverse spiral shoveling system upon which its operation depends. Materials placed in this mixer are turned over twice and moved from one end of the open drum to the other and back again during each revolution.

(Continued to page 140.)

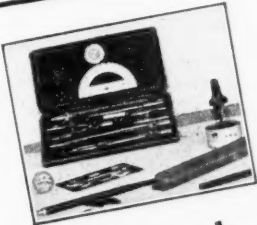
STUDY AT HOME

By "Chicago Tech." New, Quick, Easy Way

BUILDERS' COURSE

**For Carpenters, Bricklayers, Foremen, Superintendents,
Contractors and all men in the Building Lines**

This old-established college helps the man who has never had the chance to get a first-class knowledge of Building, Plans, Specifications, Estimating, Contracting, etc. Chicago's foremost architects, estimators, contractors, will be your teachers. If you cannot attend the day and evening classes of the college, you can get the same instruction, under the same instructors, by the "Chicago Tech." Home-Study Course.



"This high grade drawing outfit included with all courses in Drawing. Drawing is not a part of the Builders' course unless desired. We arrange all courses for Builders either with or without drawing. Complete blue print plans and specifications sent free with the Builders', Plan Reading and Estimating Courses".

**Plan Reading
Estimating
Contracting
Specifications
Architectural
Drawing
etc., etc.**

No books to buy

**All Blue-Print
Plans FREE**



CHARLES W. MOREY
President of the College
and Head of a Large Chicago Firm of
Engineers and Contractors

You know you must have a complete knowledge of plans and specifications if you are to do big things. The successful Foreman, Superintendent, Contractor **MUST KNOW**. He must be able to estimate closely and correctly. You can master these subjects in a very short time in your own home. Your spare time is enough. Any man can save the cost of the course on one job alone. Hundreds of men in the building trades do this very thing every year. You can. Will you?

This is a Practical Course for Practical Men. Your instructors are Chicago's foremost experts in their respective lines. **THEY** prepare your work. **THEY** examine and approve your work. We send you actual blue-print plans of buildings now being built or recently completed. Think of the work you have had to pass up because you did not know **HOW**. Think of the **OPPORTUNITIES** training will give you. Act right now. Don't delay—write today for full information. The coupon offers an easy way, mark and mail **NOW**.

CHICAGO TECHNICAL COLLEGE

1017 Lake View Building, Chicago, Ill.

Mark "X" opposite work in which you are interested. Without obligation on you we will send full information.

- | | |
|---|--|
| <input type="checkbox"/> Architectural Drafting | <input type="checkbox"/> Building Superintendence |
| <input type="checkbox"/> Builders' Course | <input type="checkbox"/> Structural Steel Drafting |
| <input type="checkbox"/> Estimating | <input type="checkbox"/> Sheet Metal Drafting |
| <input type="checkbox"/> Plan Reading | <input type="checkbox"/> Reinforced Concrete |
| <input type="checkbox"/> House Planning | <input type="checkbox"/> Machine Drafting |
| <input type="checkbox"/> General Contracting | <input type="checkbox"/> Surveying |

(1017)

Name _____

Address _____

Town _____ State _____

College or Home-Study Course _____

tion of the mixing shovels. The construction is simple, the principal parts consisting of a horizontal shaft carrying six shovels mounted on the axis of the drum. The shovel blades are made of high carbon steel and these are attached to the outer ends of malleable iron castings in such a way that the three at one end of the mixer throw the materials away from that end during one-half a revolution while the three at the other end throw the batch back again during the other one-half revolution.

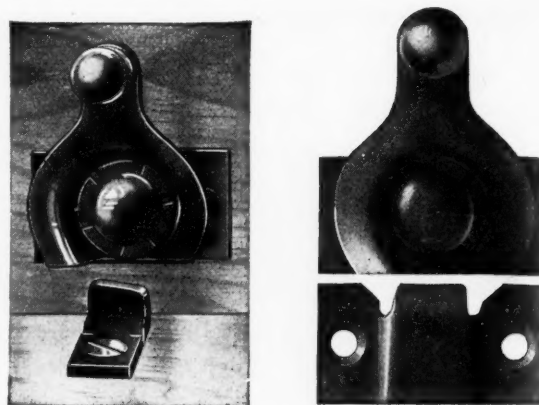
The mixer drum is made of high carbon steel and is mounted so that it may be revolved about the shaft which carries the shovels, to dump the batch. The drum is open at all times so that the mixing process is always under observation and may be carried on until just the right consistency is obtained. This feature is also valuable in keeping the drum clean. Four sizes are made, suitable for 3, 5, 7 and 9 cubic foot batches.

The catalog contains several illustrations showing the Blystone mixer on various kinds of work, including products plant mixing, plaster mixing and various kinds of general concrete work. Contractors and builders who have not investigated the open-drum type of mixer will find a great deal of interesting information in this Blystone catalog.



Cam Action Catch For Cellar Windows, Storm Sash, Etc.

Illustrated is a catch recently added to the Stanley Works' New Britain, Conn., line of "hardware for cellar windows." No. 1763 catch is held in any position by a tension spring washer which prevents it from rattling and working loose. Windows stuck to their sill are forced open by the lever or cam action of the slanted edge. Because of its wide diameter this catch works satisfactorily with as much as a 3/16-inch crack between the sash and the sill. The catch is made



New Stanley Window Catch for Cellar Windows and Storm Sash.

of heavy wrought steel. Note the strong thick rivet and the comfortable knob.

The strike plate is shaped hollow in order that it will not become clogged with dust or dirt. It is strong, simple and durable.

A catch at the top and bottom of a cellar window, or one at each side, is all the hardware necessary to hold the sash securely in place; and when coal is being put thru the opening the sash can be removed and there is no danger of the glass being broken.

In attaching, apply edge of strike to edge of the sill and the edge of the plate to the edge of the sash. Line up the side edges of the strike with the edges of the plate.

The Stanley Works, New Britain, Conn.; The Stanley Works, 100 Lafayette St., N. Y., or 73 E. Lake St., Chicago, will be pleased to furnish additional information.

"Father of them All"



The
Great Bell

The Original Pipeless Furnace

We have thousands in use. Sizes, styles, and prices to suit all, \$38.00 to \$94.00.

This furnace will heat any one or two-story building in the most efficient manner; with the least effort, and the lowest relative cost. It is made for the building where a furnace is needed, but where the cost has been prohibitive.

Our methods of production and sales have reduced the cost so low that no builder can afford to overlook our proposition.

Write for our catalogs, describing the various styles, prices and specifications of the Great Bell Furnace. We guarantee them to be and do all we claim for them in both catalog and correspondence.

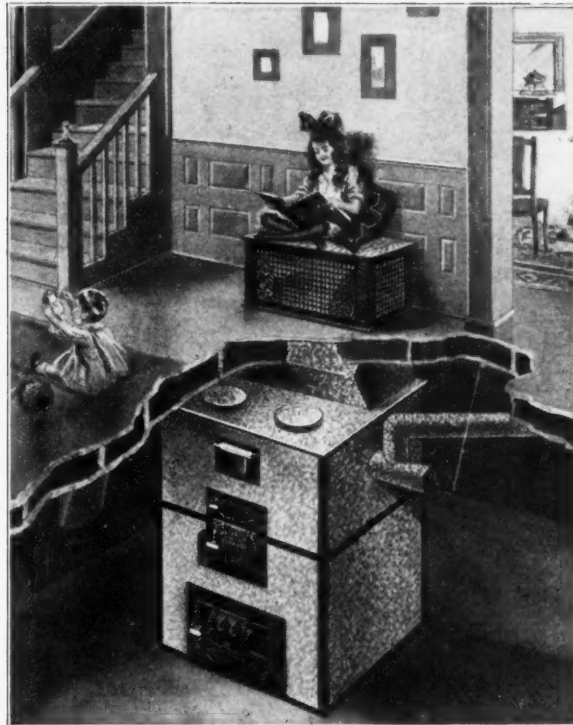
American Bell & Foundry Company, Northville,
MICH.

Introducing the new square *Majestic* Duplex One-Register Heating System

No exposed
pipes

All cold air
connections
inside

Keeps
basement
cool



Easy
to install

Front and
back of
casing all
assembled

Screw-driver,
awl, hammer
and snips only
tools needed

The Best Pipeless Furnace Ever Built!

This new Majestic represents the final perfection in pipeless furnaces.

The Majestic Pipeless Furnace was always a step in advance of ordinary pipeless systems because of the patented extended Register.

Now, built on the new square principle with all cold-air connections—inside—this new Majestic will more than ever dominate the pipeless furnace market.

These two striking features of the Majestic will make it the most popular Heating System of its kind.

The projecting register does away with every disadvantage of the floor level register and affords many varieties for placement. It can be set at the side of the wall and opening into two rooms, and the heat diffused evenly or otherwise. Or it can be placed between two rooms in the base of the colonnades. Built-in bookcases can be placed directly on top of the register.

Or an extra pipe or two can be run to any out-of-the-way, hard-to-heat rooms without interfering or affecting the direct central heat flue.

The new Majestic may be installed in any size cellar and because of its square construction is as easy to erect as a stove, as it comes with front and back of casings all assembled.

Just a small part of the cellar space is needed and you can install one in a short time with the use of only a screw driver, awl, hammer and snips.

We are furnace specialists and build one of the best lines of standard type in America. The popular Majestic Down Draft Furnace is famous the country over and is in use in thousands of homes. So when you sell the Majestic you are selling a furnace that gives universal satisfaction. Be the one in your community to show this Majestic and get the "pipeless business" in your town.

Chance for Winter Profits Send for Catalog

Investigate this new square Majestic Heating System as a possibility for winter profits. It represents the first really practical pipeless furnace that you can profitably sell and install yourself. Get the whole story in our Catalog.

Mail This Coupon

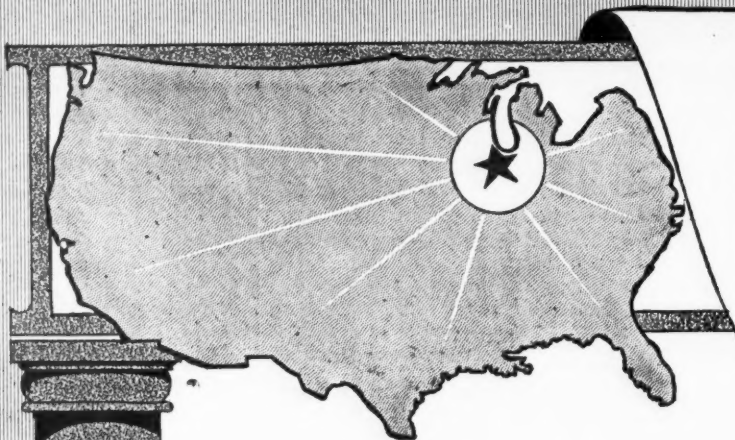
THE MAJESTIC CO.,
610 Erie St., Huntington, Ind.

Please send me catalog and full particulars about the new Majestic Heating System.

The Majestic Co.

610 Erie St. Huntington, Ind.

Manufacturers of Coal Chutes, Garbage Receivers, Milk and Package Receivers, all-metal Basement Windows, Rubbish Burners, Street and Park Refuse Cans, Metal Plant Boxes, Pipe and Pipeless Warm Air Furnaces, etc.



Look Before You Build

Get the habit of writing to us in regarding to your building wants. This exhibit is a regular clearing-house of building information—the market where you can do your buying to the best advantage.

We Are Saving Builders Thousands of Dollars

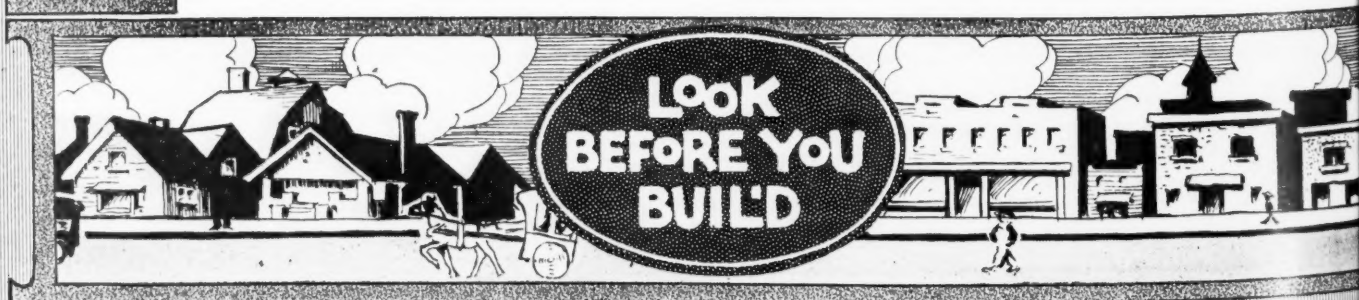
HUNDREDS of builders, architects and contractors are visiting Chicago's great Building Material Exhibit every day.

They recognize its unique value—have found by personal experience that they can save not only time but hard cash by coming to the **Exhibit**, where they can see the actual products they need—compare various makes side by side—pick the best for their purpose—secure the lowest figure without loss of valuable time—and be **sure** that it is the lowest.

They do all this at this vast Building Exposition—why not **you**?

Over 200 elaborate and interesting displays by America's leading manufacturers of building material and equipment. This great permanent **Exhibit** is one of the showplaces of Chicago—worth coming far to see. For those who cannot come we have a special market-investigation Service. Send us your plans and we will secure bids on any material or equipment for you without charge. Write us today.

BUILDING MATERIAL EXHIBIT, Entire Second Floor, Insurance Exchange
CHICAGO, ILL.



Look Before You Build

Here is your opportunity. Under one roof and on one floor all your building wants can be supplied. Here you can get in direct touch with the manufacturer and effect big sales.



Let Us Show You Where You Can Save Money on All of Your Building Materials—Send Coupon Today

This huge permanent building material exhibit is established primarily for your benefit. Here 200 manufacturers have come together under one roof—condensed their business into 200 intensely interesting displays, and invite you—for your own profit—to come and see and learn.

As a builder you are invited to make our beautiful display rooms your Chicago headquarters. We are here for that purpose. If you cannot come to Chicago yourself, get acquainted with us by mail, and let us be your Chicago representative. This service will cost you nothing, and will add materially to your financial welfare.

BUILDING MATERIAL EXHIBIT Insurance Exchange CHICAGO

Gentlemen:—I am in the market for the following. Please put me in touch with manufacturers.

.....
.....

Name.....

Street.....

Town..... State.....

BUILDING MATERIAL EXHIBIT, Entire Second Floor, Insurance Exchange
CHICAGO, ILL.



**LOOK
BEFORE YOU
BUILD**

—Do a Big Winter Business Making Automatic Sealing Vaults

Every Contractor can keep busy during the winter months making and selling Automatic Sealing Vaults. Vaults that seal perfectly and are absolutely air, moisture and vermin proof—concrete burial vaults. And they sell readily and at a good profit. Made with our adjustable Bessemer Steel Molds—in your own shop.

Write for further information regarding our proposition.

Automatic Sealing Vault Co.
274 East River St. Peru, Ind.



Mold adjustable to seven sizes

AGENTS \$45 to \$80 a Week



Thousands of dollars paid to agents already in the field; Rev. Otto Schulze, Mo., got \$1700.

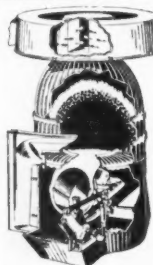
Burkholder, Montana, orders \$1072 in 17 days. Well, of Missouri, made \$10 in one hour. Hamlington, of Wyoming, made \$60 first two days. We want good agents in every county in the United States, Canada and Mexico.

NEW INVENTION

BATH TUB. Gives to every home a complete bath room in any part of the house—without expense. Biggest, quickest, surest money maker of the century for agents. Territory being rapidly assigned. Send your application today.

100% PROFIT We back you with our capital and experience. We give you complete instructions, assistance and co-operation. No charge for territory. Don't delay. Send your name at once. Write plainly and give name of your county. Complete particulars FREE. Write today.

ROBINSON MFG. CO., 4509
Factories Bldg. Toledo, O.



Cut-Out View of New-Feed UNDERFEED Furnace

"From Overfed to UNDERFEED"

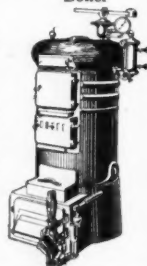
Over 35,000 furnace and boiler users have changed from the old-fashioned top feed—always "overfed"—to The Williamson New-Feed UNDERFEED. Fuel saving of 1 to 1 1/2 is guaranteed.

Get Free Book Now

A postal brings illustrated book to any carpenter, builder or contractor. Write that card today—learn how you can guarantee your customers big fuel savings by recommending the UNDERFEED.

The Williamson Heater Co.
67 Fifth Ave. Cincinnati, O.

UNDERFEED Boiler



A Building Material of Many Uses

Altho originally put on the market years ago as a wall lining with several distinct advantages over lath and plaster, the patented product that is distinguished from other wall boards by the name Compo-Board and the wood core construction, has not only made good in its primary use as a wall lining, but has come into popular use for 101 other different purposes.

Coming, as it does, in straight, smooth, stiff sheets of large size—sheets that, tho only 1/4 inch thick and lighter than wood panels of the same thickness, are unusually strong, non-warping, easy to handle, saw and work with, Compo-Board has come into wide favor for use in stores and offices and theatres for window display backgrounds and exhibition booths; for partitions, screens, telephone booths, ticket booths and blackboard backgrounds; in factories in preference to wood panels for drawer bottoms, backing for pictures, wall



The Enterprising Management of This Moving Company Found that by Building the Bodies on Their Vans of Compo-Board Instead of Wood They Reduced Their Weight Several Hundred Pounds and Still Just as Strong and Serviceable a Van.

cases, kitchen cabinets, stage scenery, lining for incubators and refrigerators and other articles; for making the bodies on moving vans and delivery wagons and the roofs of limousines and other closed cars; on the farm for lining barns, poultry houses, and for making many useful articles such as cabinets, fireless cookers, lap boards and tool racks.

The manufacturers have recently received a large order from China which calls for many thousands of feet to be delivered immediately, and a corresponding amount to be delivered every few months, giving some idea of how near Compo-Board has come to being a universal building material.

As a wall lining Compo-Board has not only proved practical and satisfactory in every type of house and building from the simple hut of an Alaskan prospector to the dining room of the Knickerbocker Hotel in New York, it has not only stood the test in every climate, hot and cold, damp and dry, but it is even in use on ocean-going steamships plying between San Francisco and Honolulu. Before Compo-Board was used as the wall lining in the staterooms, dining rooms and saloons on such ships, only steel and wood panels were strong enough to stand the strain and vibration.

How many jobs --- this January?

Does your business fall off in Winter? Do you ever need something to fill in? Are you protected against competition? Do your earnings jump ahead every year? Is your future secure? Are you making all the money you want now? Unless you can answer "Yes" to all these questions it may pay you to spend ten minutes considering the Norwalk Vault proposition. For example—

Best Paying Side Line Known.

Twenty manufacturers selected at random from all over the United States report an average production cost of \$9.31 and an average selling cost of \$31.90—indicating a gross profit of \$22.59 per vault, or something like 242 per cent profit. This, however, is a higher rate than we would undertake to guarantee in every case, as overheads, labor and materials vary in different localities. Even so, Chris Abraham, of Capac, writes us: "There is absolutely no comparison in profits. It's the best thing I have."

Grows Steadily Every Year.

Eighteen other manufacturers selected at random report an average of a bit over four years in the Norwalk business—the longest experience quoted, ten years; the shortest, one year and four months—during this time their average gain was 222 per cent, or a jump of around 50 per cent for each year in business. This we regard as conservative; if a man can't grow this fast we'd rather he'd leave the thing alone. But the right sort of men are making the Norwalk lay the foundations of a fortune.

Gets You in on Ground Floor.

During its ten years of business the Norwalk Vault Company has assigned to local manufacturers more than half of the United States and a good part of Canada. The remaining territory is fact being taken. With its own branches in New York, New Jersey and Ohio, and three hundred affiliated local manufacturers, all working to popularize the Norwalk Vault, it is easy to see how the value of a territory jumps every year, like real estate in a growing city.

Absolutely Best of Its Kind.

"The Norwalk is in a class all its own," writes Petrie, of Bloomington. "There is no comparison—we have seen them all," writes Camp, of Columbus. "Best from all points," says Elmore, of Rocky Hill. Cardwell, of Fitzgerald, tells us: "It is the only vault that is what it is guaranteed to be." "Norwalk is in a class of its own," writes Grace, of Logansport. Lyle reports: "Norwalk has practically driven all others out of Philadelphia market." And Berger, of Cobleskill, writes: "Can sell Norwalks at twice the price with less effort."

Sales Can't Fail to Increase.

Nothing is so stable as the annual death rate. Next year or twenty years the average will be about the same. Every year, however, people are awakening to the needs of a more modern method of burial. Ten years ago, when the Norwalk Vault Company just started, the idea of a steel reinforced cement container was practically unknown—now the Norwalk is being preached by the leading undertakers and cemeteries in nearly every big city. Their future is assured.

Little Capital, Small Overheads.

No more territory will be allowed any local manufacturer than he has capital and energy to develop properly—his success is essential to ours. Any respectable shed will serve as a plant, materials are simple and easily obtained. Odd time unskilled labor may be utilized profitably. Neither expensive machinery nor high salaried superintendence necessary; a business that may be opened and closed according to conditions as easily as an umbrella, and—like the umbrella—an ideal side line against a rainy day.

Backed by Reliable Firm.

"Your business dealings have been perfectly satisfactory," volunteers Sherer, of Albany. "Always prompt, courteous and considerate." "In every respect," adds Petrie, of Bloomington, "our dealings have been above the average in courtesies. Recently we asked sixty-five local manufacturers the question: 'Have your dealings with us been satisfactory?' 37 answered simply, 'Yes'; 3 said, 'yes,' with some minor exception; 1 said 'No'; 1 said 'Not entirely'; 13 said, 'Very satisfactory'; 8 'Perfectly satisfactory,' and the other 3, 'Absolutely,' 'Always,' and 'First Class.'"

Strongly Endorsed by Users.

"I find in the vault business more money and less hard work," reports Bullerick, of Westboro. "I can say unhesitatingly and unqualifiedly that the manufacture of these vaults is more productive of profit than any other line of cement work I know of," says West, of Mt. Vernon. "It is a money maker," writes Kuhaup, of Horicon. "The Norwalk yields more profit for the investment than anything I make," adds Hall, of Eugene. "I know the Norwalk is best of any cement product," says Mehr, of Bunker Hill. Pietz, of Bicknell, writes: "Properly developed, the Norwalk has them all beat as a money maker."

If you expect to be overworked in January don't bother with this advertisement. If you are looking for a get-rich-quick scheme don't waste your time or ours. But if you could use a side line that might develop into a big business, it might pay you to find out if your locality is still open. A little capital and a lot of energy will be required. No need to write. A post card saying "send particulars" will suffice. No obligation now or in the future. Address

Norwalk Vault Company, 71 Prospect St., Norwalk, Ohio

None but the Norwalk

How To Take Care of Oak Floors

By W. L. CLAFFEY, Chicago.



ish, and very often to the wood itself.

If one only knows how, nothing is easier than the care of a well finished oak floor. Usually the care of floors is entrusted to the discretion of servants whose intentions may be good, but whose methods are more often bad.

There are several preparations put up by varnish and wax manufacturers that give excellent results for cleaning and the care of oak floors which can be bought at any department or paint store.

Never use water, oil, kerosene, turpentine, soap, gold dust, Dutch cleanser, or any other cleansing agents, except as follows:

Shellac Finish: If water has been spilled upon the floor and it has turned white in places, moisten a soft cloth with a little alcohol and lightly rub the spots, which should immediately disappear. Do not repeat this operation too often, however, or the finish will be entirely removed. Shellacked floors sometimes take on a clouded or grayish appearance due to dampness in the air. This condition can usually be greatly improved by the same treatment as above. If the finish has become so dirty that it is necessary to remove same entirely, first scrub the floor with wood alcohol and then bleach it with oxalic acid—never use lye as it turns the wood

LL floors require some attention. No housewife expects to keep her floors looking beautiful without some attention. Naturally every housewife wants to find the simplest way of giving her floors the attention they need. In searching for this simplest way many housewives have adopted methods that experts on floor finishes know are very ruinous to the finish, and very often to the wood itself.

black and ruins the surface permanently. After all moisture has evaporated the original finish may be applied.

Varnish Finish: If the finish has become badly worn, thoroly scrub it with a brush and Sapolio and water (never flood the floor). After it has dried out, apply a thin coat of varnish; or in case time cannot be allowed for the varnish to dry, wax may be substituted. Do not use shellac on top of old varnish or varnish on top of old shellac.

Wax Finish: Waxed floors should be dusted daily with a broom covered with cotton flannel. Keep a can of wax on hand, and should the finish become worn in the doorways or elsewhere, apply a thin coat, rubbing well into the wood. Allow the wax to dry for one hour and then polish thoroly. Before rewaxing the floor, scrub it thoroly with turpentine and a piece of cheese cloth.



The "New Way" 1917 Model

The "New Way" Motor Company, Lansing, Mich., as is designated by their name, have always stood for continual progress in gasoline design, so that any announcement of improvements from their factory is watched with great interest.

They announce the 1917 Model of the "New Way" All Purpose and Binder Engine, of which reports and descriptive matter at hand indicate is a long step towards the ideal engine for binder and general purpose work and up to the minute in design and workmanship, is practically fool-proof in the hands of the average user.

The "New Way" is claimed to be the lightest engine for all purposes and binder work (in actual operating weight). There is no water tank nor hopper—all cooling being direct without any moving parts except the revolving fly wheel of engine.

(Continued to page 148.)

Our Free Plans Will Help You—

Meadows
TRADE MARK REGISTERED

Don't figure on any crib or granary without consulting our Free Plans. They will show you how to get greatest capacity at least expense by installing Meadows Inside Stationary Cup Elevators.

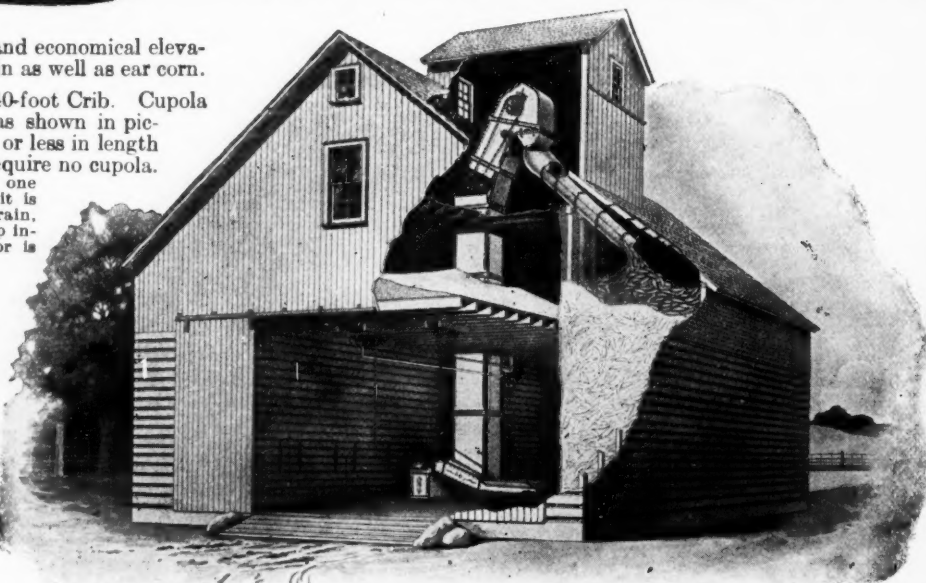
The most convenient and economical elevators, carrying small grain as well as ear corn.

The picture shows a 40-foot Crib. Cupola need not be as large as shown in picture; and cribs 36 feet or less in length with half-pitch roofs require no cupola.

Elevator is confined to one side of driveway. No pit is necessary for dumping grain. Just a hole 16 inches deep in to which boot of elevator is set. The wagon jack is entirely overhead, fastened to the joists.

But write in today for our free Crib and Granary plans, catalogs and large posters telling all about our outfits and their application. Valuable information for the builder, and writing for it obligates you in no way.

**Meadows
Mfg. Co.**
Pontiac, Illinois



CARPENTERS—

Make Big Money During Dull Months

Write
for
Special
Offer
to
Carpenters
TODAY!

Here's a winter job for you—a job which pays big profits from the start—a job which will keep you busy and fits in nicely when your regular work commences in the spring. Here's a new invention that's revolutionizing living conditions in the country and small town homes. It's a necessity to health—a preventative of disease and one of the greatest inventions of modern times for comfort and convenience. Carpenters and builders everywhere can make big money selling and installing this marvel of the 20th Century. Investigate today.

The Great United Chemical Closet

No Water—No Sewer—No Odor—Absolutely Sanitary

Every home without running water and sewer conveniences needs the United Ventilated Indoor Closet. No home is complete without it. Price low, within reach of all—and big profits to Carpenter and Builder Agents. It's absolutely germ-proof and odorless. Needs no attention except to replace fresh chemicals (which we furnish) about twice a year. Gives every home, every cottage, every school, every hotel or public building, no matter how remote, the toilet conveniences of large cities and the finest modern houses. **Guaranteed unconditionally.**

EASY TO SELL—EASY TO INSTALL

We furnish selling helps which get orders and profits for you. Circulars with your own name on them, letters, advertising illustrations, testimony of users, etc. To live wires we grant exclusive territory. Simply take orders and install according to simple directions, which we send you.

AN UNUSUAL OPPORTUNITY—ACT TODAY

Carpenters and builders have never had an opportunity equal to this for quick, big profits, right in the season when your work is slack. Don't miss it. Reserve your territory by writing today. Ask for special offer to carpenters—now. A postal will do.

THE UNITED ENGINE COMPANY, Dept. C.C. Lansing, Mich.



Mr. Builder: Increase Your Income Right Now—This Month

Here's something right in your line—a Chemical Closet that you can sell to a home builder cheaper than a wooden privy and make a bigger profit for yourself. Here's something you can sell at odd times or turn over to your son or your foreman to sell.



RO-SAN Chemical Closet

An absolutely sanitary, odorless indoor closet that may be placed anywhere in the house. Abolishes the germ breeding out-door vault. A comfort and a convenience when there is no sewer connection. Germs killed by chemical. Easily emptied as the ash pit of a stove.

AGENTS WANTED

We want one live carpenter contractor in each town to act as our agent. Hundreds of builders are selling these fixtures. Good profits for little work. We help you sell them. Write today for complete details.

ROWE SANITARY MFG. CO.

1201 Sixth Street Detroit, Mich.
Ask about the Ro-San Washstand. Hot and cold running water without plumbing.

Comfort Indoor Closet

Odorless Sanitary Germ-Proof

No Sewer, No Waterwork, No Plumbing Needed
This modern home necessity is fast taking the place of the unsightly, unhealthy, inconvenient out-house in the back yard. Thousands now in use and all giving complete satisfaction. Can be put wherever convenient in the house. No odor whatever. Gives city convenience in the country or town.

Cost Less Than Out-House
Anybody can afford one. Saves those cold night trips out-of-doors. Impossible to get same amount of comfort for the money another way. Sold on 30 days' trial and under sworn guarantee to refund all money if not entirely satisfactory. Send for description and prices today. Be fair to your family.

AGENTS MAKE BIG MONEY EASILY

Comfort Indoor Closets sell themselves as fast as people understand about them. Contractors and carpenters are making big money by merely suggesting this closet. Write for details of our exclusive agency offer. Send postal now before somebody else gets your territory.

Comfort Chemical Closet Co., 312 Factories Bldg., Toledo, Ohio



Heats Ventilates Satisfies

"The Modern Way"

PIPELESS FURNACE

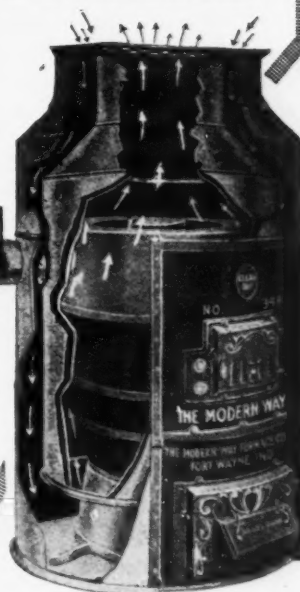
Cash in on the cold weather this winter by selling and installing these furnaces.

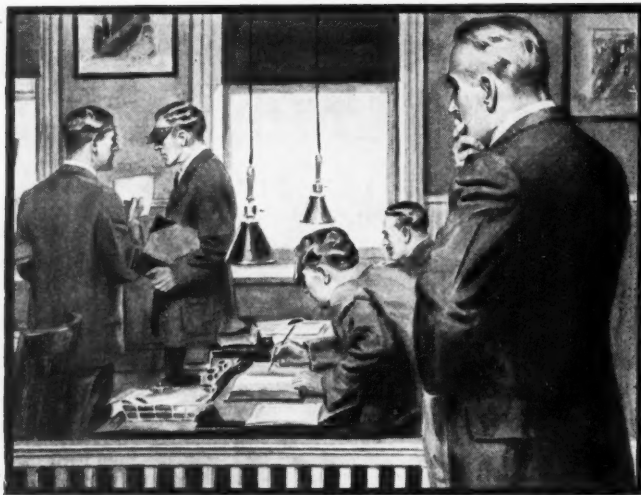
They practically sell themselves. All you have to do is explain the advantages of "The Modern Way" heating system. They so far outweigh the merits of the old system that when once explained, they will clinch the heating contract on the spot, and you get a nice profit. Easily installed in a day's time, without special tools or furnace experience.

We guarantee every furnace we put out; send full instructions telling how to install each one properly; and give you exclusive territory. Write today for our proposition.

The Modern Way Furnace Co.

Offices, Shoaff Bldg.
Fort Wayne, Ind.





The Boss is Sizing You Up

Whether you know it or not, he's on the lookout all the time for men he can promote. He's ready and anxious to give YOU bigger work with bigger pay once you prove you can handle it.

If you *want* to get ahead, if you want to *be* somebody, to climb into a position of responsibility and good money—

Get Ready—Your Chance Will Surely Come

Choose the position you want in the work you like best—then train for it. You can do it in spare time in your own home through the International Correspondence Schools.

More than 130,000 men *right now* are putting themselves in line for promotion through the study of I. C. S. Courses. This way to success is always open. All the I. C. S. ask is the chance to tell you about it. No cost to find out. Just mark and mail this coupon now.

INTERNATIONAL CORRESPONDENCE SCHOOLS

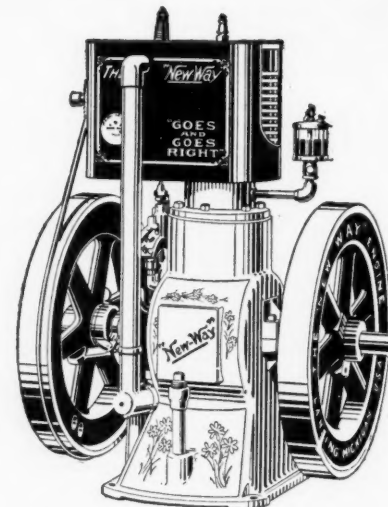
Box 8137, SCRANTON, PA.

Explain, without obligating me, how I can qualify for the position, or in the subject, before which I mark X.

- | | |
|---|---|
| <input type="checkbox"/> ARCHITECT | <input type="checkbox"/> Law for Contractors |
| <input type="checkbox"/> Architectural Draftsman | <input type="checkbox"/> BUSINESS (Complete) |
| <input type="checkbox"/> Contractor and Builder | <input type="checkbox"/> BOOKKEEPER |
| <input type="checkbox"/> Building Foreman | <input type="checkbox"/> Stenographer and Typist |
| <input type="checkbox"/> Concrete Builder | <input type="checkbox"/> Higher Accounting |
| <input type="checkbox"/> Plumber and Steam Fitter | <input type="checkbox"/> GOOD ENGLISH |
| <input type="checkbox"/> Heating and Ventilation | <input type="checkbox"/> Common School Subjects |
| <input type="checkbox"/> Plumbing Inspector | <input type="checkbox"/> Mathematics |
| <input type="checkbox"/> Foreman Plumber | <input type="checkbox"/> SALESMANSHIP |
| <input type="checkbox"/> CIVIL ENGINEER | <input type="checkbox"/> ADVERTISING MAN |
| <input type="checkbox"/> Surveying and Mapping | <input type="checkbox"/> Window Trimmer |
| <input type="checkbox"/> Structural Engineer | <input type="checkbox"/> Show Card Writer |
| <input type="checkbox"/> Structural Draftsman | <input type="checkbox"/> CIVIL SERVICE |
| <input type="checkbox"/> ELECTRICAL ENGINEER | <input type="checkbox"/> Railway Mail Clerk |
| <input type="checkbox"/> Electric Lighting | <input type="checkbox"/> AGRICULTURE |
| <input type="checkbox"/> Electric Wiring | <input type="checkbox"/> Poultry Raising |
| <input type="checkbox"/> Electric Car Running | <input type="checkbox"/> MINE FOREMAN OR ENGINEER |
| <input type="checkbox"/> MECHANICAL ENGINEER | <input type="checkbox"/> Metallurgist or Prospector |
| <input type="checkbox"/> Mechanical Draftsman | <input type="checkbox"/> Chemical Engineer <input type="checkbox"/> Spanish |
| <input type="checkbox"/> Shop Practice | <input type="checkbox"/> Gas Engineer <input type="checkbox"/> German |
| <input type="checkbox"/> Sheet Metal Worker | <input type="checkbox"/> AUTOMOBILES <input type="checkbox"/> French |
| <input type="checkbox"/> STATIONARY ENGINEER | <input type="checkbox"/> Auto Repairing <input type="checkbox"/> Italian |

Name _____
 Occupation _____
 & Employer _____
 Street _____
 and No. _____
 City _____ State _____

If name of Course you want is not in this list, write it below.



The "New Way" 1917 Model Gasoline Engine.

The light weight, together with jump-spark ignition from high tension built-in magneto; patented oil-tight, dust-proof, hinged crank case; throttle governed; high-grade automobile carburetor; drop forged steel connecting rods and crank shaft and multiple steel disc clutch, mean that considerable thought has gone into the design of this engine.

As it the custom of the "New Way" Motor Company, this 1917 engine is backed by the Company's Guarantee, which holds good for the entire life of the engine.



An Architectural Competition Based Upon Work Actually Erected

\$500 In Cash Prizes for the Best Designs and Plans for Moderate Priced House—Conducted in Connection with National Complete Building Exposition

Grand Central Palace, New York City, Mar. 5 to 11, 1917

The competition is under the direction of the National Complete Building Show Company, of Grand Central Palace, New York City. Plans will be exhibited at the Exposition in March.

Jury will consist of seven prominent New York architects. Contest closes Jan. 15, 1917.

The following Cash Prizes will be awarded:

First Prize.....	\$200.00	Fifth Prize	25.00
Second Prize	100.00	Sixth Prize	25.00
Third Prize	75.00	Seventh Prize	25.00
Fourth Prize	50.00		

Honorable Mention will be given to designs placed eighth to fifteenth.

The problem is for a house which actually has been built at a cost not over \$5,500 complete—exclusive of lot.

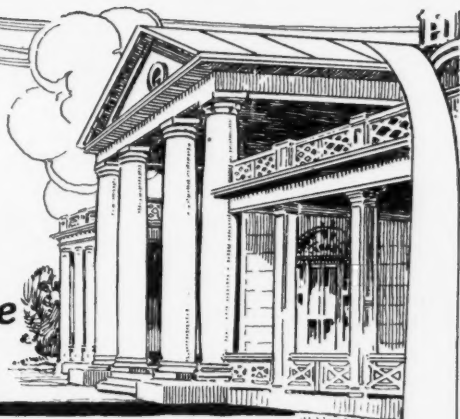
This is regardless of the size of lot required for the house, kind of materials used in its construction, whether two-story or bungalow; provided same has been completed since January, 1914.

While all houses considered in the competition *must* have been complete *within a cost of \$5,500*, the judges will give *equal consideration* to houses of lower cost. The house combining the best in design at its cost—the best house for the money expended—in the opinion of the judges, whether its cost is \$2,000 or \$5,500, will receive first award.

The exact location of the house—State, City, Street and Number—must be given upon the drawing. In awarding prizes, these will be investigated by the judges. *Only designs from which houses have been actually constructed will be considered for prizes.*

(Continued to page 150.)

The House Secure is a Bayonne House



The far-sighted architect insists upon using

Bayonne Roof and Deck Cloth

wherever roofing and flooring materials are required. He knows the ravages of wear and weather. And he knows that Bayonne will resist these attacks more satisfactorily than any other material. He knows that Bayonne cannot crack, curl or corrode, and that it is not affected by temperature changes. He knows also that Bayonne is more easily and economically laid than any other roofing or flooring material—metal or fabric—on the market.

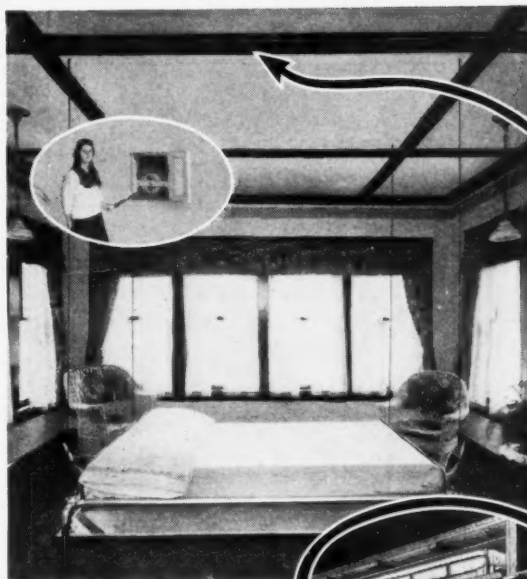
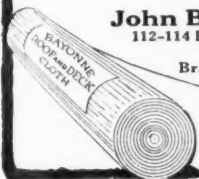
This is why he recommends Bayonne for roofs, porch decks, sleeping porches, conservatories, etc.

Write for Sample Book "B" giving prices and laying instructions

John Boyle & Company, Inc.

112-114 Duane Street 70-72 Reade Street
New York City

Branch House: 202-204 Market St.
St. Louis



The Bed That Vanishes Into the Ceiling Right Side Up

Please Your Customers

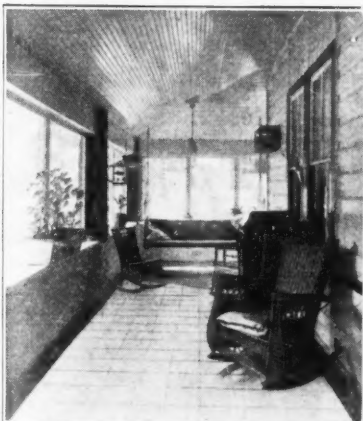
By showing them how to get more comfort, more room, better looking rooms and greater convenience by installing the

Ceiling Bed

in small houses, sun parlors, porches, apartments, etc. Easily installed in old or new houses. Put the bedrooms in the ceiling. Write for information.

Sorlien Ceiling Bed Co.

410 6th Ave. S. Minneapolis



Front Porch Made Into a Sun Parlor with



The Floor That's Laid With a Guarantee

sell. Also makes it easy to get the job, if you can offer your client a sanitary floor in competition with unsanitary wood floors. Asbestone looks, wears and feels like tile, yet warm and resilient. May be laid over old or new floors, without experience, if our instructions are followed. Ask for full information, prices, etc., for exclusive arrangement in your community.

FRANKLYN R. MULLER & CO., 10 Madison St., Waukegan, Ill.

20x27 feet, scored like quarry tile. This job in tile would have cost \$70 installed. Asbestone material cost \$21 and required about one day's labor to lay.

Complete Instructions Free

in the laying of permanent sanitary floors. When Asbestone is installed in **Sun Parlor, Sleeping Porch, Kitchen, Pantry, Bath** or any other room, it makes the house **easy to**



Get FREE Finished Samples and Big Door and Trim Book

They show you how you can produce the most beautiful effects and finishes in hardwood trim, doors and floors in "beautiful birch." No wood finer though many cost more. **birch** furniture is standard, ask your dealer. Send postal card TODAY.

NORTHERN HEMLOCK & HARDWOOD MANUFACTURERS ASSOCIATION

201 F. R. A. Bldg. - - - Oshkosh, Wis.

Build Your Own Grandfather's Clock with our help

With the blue prints, instructions, finishing material, etc., we furnish, any handy man can build his own Grandfather's Clock. We sell you the works, dial, weights, pendulum, and everything you need at prices so low as to surprise you.

Works complete, \$5.00 each; others with chimes, all prices.

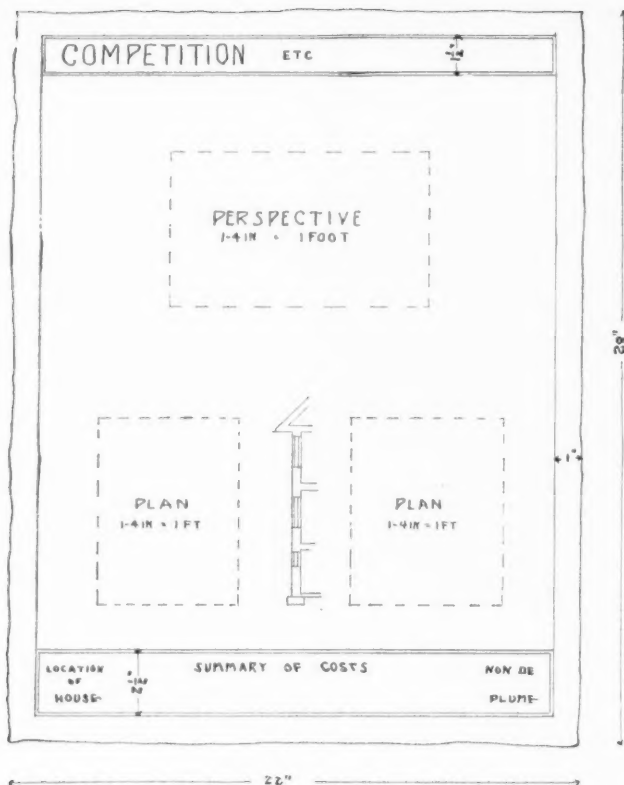
Here's winter work you can turn to good profit. Make duplicates for your friends. Our designs are clear cut, attractive and salable. Write for our free offer on the drawings, etc.

CLOCK COMPANY

1655 Ruffner St.

Philadelphia, Pa.





This Arrangement Must Be Followed in National Complete Building Exposition Competition.

A summary of costs must be given in detail, with exact expenditures for the various items of construction, as follows:

Excavating	Heating
Masonry Work	Wiring
Carpentry	Fixtures
Roofing	Hardware
Painting	Shades
Plastering	Sidewalks
Plumbing	Carpentry
Tinning	Total

These items will be carefully checked by the judges and must logically compare with the size and type of house shown.

Drawings are to be grouped upon a single sheet of STILL BOARD. (No other kind accepted.) Arrangement of draw-

ings is to be uniform and must conform to specimen shown in accompanying illustration. This plan will place all competitors upon an equal footing and will be greatly to their advantage if their drawings are selected by the judges for reproduction in a book to be issued by the Show Company. Rendering thus becomes of minor consideration. Designing and planning are considered first.

To provide uniformity: ALL drawings upon the sheet are to be upon a SCALE OF ONE-QUARTER INCH TO ONE FOOT. Only perspective, first and second floor plans, continuous section thru outside wall, showing story heights, and box containing data are to be shown. Perspective may be drawn from any angle, which best shows the advantageous features of the design. Rooms and dimensions are to be clearly shown on plans.

While not essential, it is desired that, if possible, each drawing be accompanied by a 7 by 7-inch photograph of the house as completed. This photo should be what is known as a carbon-print—black and white—to insure good reproduction.

The right is reserved to reproduce in book form or for publication any drawing or photograph submitted.

All drawings not awarded cash prizes will be returned to contestants at the expense of the National Complete Building Show Company, within a reasonable time after the exhibition in New York.

Address communications and drawings (postage or express PREPAID), to National Complete Building Exposition, Grand Central Palace, New York City.



Money Making Opportunity

This is an age of great inventions, but no invention of modern times has more attractive features for agents than Grab's automatic shoe cleaner. The manufacturers claim that this labor-saving invention is taking the country by storm; that over one-half million have been sold; and that millions

(Continued to page 152.)

Best Roof Under the Sun
Montross Metal Shingles for House or Barn or buildings that require durable, economical roofs. Easily applied. Fire, lightning and storm proof. Nine different designs. Write for illustrated catalog and testimonials from satisfied customers who have used Montross Roofing for a "Quarter Century." Liberal commission to good, live agents.
Montross Metal Roofing Co., 110 Erie St., Camden, N. J.

BLUE VALLEY SLATE MFG. CO., Ltd.

Miners and Manufacturers of

Unfading Roofing
Clear Structural
Electrical

SLATE

World's Fair
Premium
Blackboards

SLATE SINK TOPS A SPECIALTY
Write for Prices. Address: Box 472, Slatington, Pa.

ROOFING SLATE SINCE 1869

Miners, Makers and Shippers of all Styles and Colors of Roofing Slate. Write for Prices.

RISING & NELSON SLATE CO.

Main Office: West Pawlet, Vt.

Branch Offices:
1058 Marbridge Bldg., New York City. 4 Post Office Sq., Boston, Mass.
Office and Yard. 2554 W. Harrison St., Chicago, Ill.

SLATE WE HAVE WHAT YOU WANT

In Roofing Slate, Slate Blackboards
Structural and Plumbers' Slate

SATISFACTION GUARANTEED in QUALITY and PRICE

Ask for Delivered Prices

J. K. HOWER Station C Danielsville, Pa.

R. J. KICHLINE, Sales Agent

ROOF SLATES

STRUCTURAL SLATE BLACKBOARDS

E. J. JOHNSON

38 Park Row New York

Quarry Operator

BLACK, GREEN, PURPLE, RED

Booklet, Samples and Prices on Application

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

UNFADING ROOFING SLATE and Slate Blackboards

Best to be had and made in
Slatington — Buy from us

Slatington-Bangor Slate Syndicate, Inc.
Slatington, Penna.



ROOFING SLATE

—“they
were represented
to be as good as G F T
slate but after we used them
we know POSITIVELY that they
were NOT AS REPRESENTED. Hereaf-
ter we will use G F T slate. We are
done with ‘Just as Good’ brands.”
This is the experience of all who buy
UNKNOWN brands of roofing. Insist
on G F T slate. They are the best and
cheapest in the end. Price List
and Catalogue on request.
Sole Manufacturers
Slatington Slate Co.
Slatington, Pa.



THE ROCK OF AGES CLEFT FOR YOU

RED GREEN
PURPLE BLACK
**SHELDON'S
SLATE**

THE ROOF FOR AGES ALWAYS NEW

ECONOMICAL — ARTISTIC — FIREPROOF
Outlast the building. First cost, only cost. The only roof you can afford
to consider for a permanent investment. Artificial substitutes bring endless
expense for upkeep. Post a postal and get posted.

F. C. SHELDON SLATE CO., Granville, N. Y.

Genuine Bangor Roofing Slate

Costs but little more than tin and asphalt shingles, about the
same as metal shingles and good wooden shingles, and less than
asbestos shingles and tile roofing.

It will wear five times as long as tin or asphalt shingles, three
times as long as metal or wooden shingles, and will more than
hold its own with tile and asbestos shingles.

Made in three grades at prices averaging \$3.25, \$4.50 and \$5.75
per square at quarry. Can be shipped with nail holes punched,
ready for laying.

Give your customers the best value for their money. Write for
prices and freight cost to your station.

North Bangor Slate Company
Bangor, Pa.

CON-SER-TEX

**For the Sake of Your Reputation
RECOMMEND
CON-SER-TEX**

The building roofed with CON-SER-TEX Can
van Roofing will do credit to your reputation.
CON-SER-TEX is a scientifically treated roof-
ing canvas that wears like iron and gets the
better of any kind of weather. It is easy to
lay and hugs the surface tightly. More eco-
nomical than any other floor or roof covering.

Write today for generous sample—see
how it looks. Try it—see how it wears.
An attractive booklet “Roofing Facts
and Figures” will be sent to you
upon request.

Wm. L. Barrell Company
8 Thomas Street - New York City

CHICAGO DISTRIBUTOR:
GEO. B. CARPENTER & CO.
430-440 WELLS ST.

CALIFORNIA DISTRIBUTORS:
WATERHOUSE & PRICE CO.
LOS ANGELES

PACIFIC BUILDING MAT. CO.
SAN FRANCISCO

CON-SER-TEX

**throughout
the Winter—**

**Hudson
Asphalt Shingles**

can be laid. They come flat and do not have to be
unrolled like roll roofing.

Surfaced with Red, Green or Mottled Crushed Slate.

Furnished in individual shingles size 8"x12" and in
strips 10"x40" with 5 shingles to a strip, which greatly
reduces the labor cost.



Asphalt Ready Roofing Co.

Dept. 453, 9 Church Street, New York

ASPHALT READY ROOFING CO.,
Room 453, 9 Church St.,
New York.

Send particulars regarding Hudson Shingles.

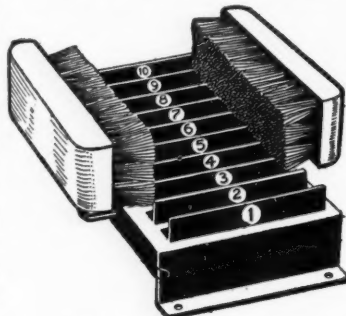
Name.....

Address.....

are waiting to buy. Its sale offers big opportunity to agents. Those who are "in the know" say fortunate indeed are those who have or will get their county under exclusive contract, as it is an opportunity for the agent to make his entire or spare time productive of big earnings. It supplies an enormous demand—solves a great home problem in which nine out of ten families are vitally interested. Practically every home offers a prospective customer for the sale of one or more.

Dirty shoes with their load of dirt, mud or snow have been the bane of every woman's life. "Wipe your shoes before entering this house" has been everybody's wish, but nobody's privilege. Door mats and crude steel scrapers fail in this mission because they are not scientific. They clean the sole, but not the shoe; the bottom, but not the sides.

Grab's automatic shoe cleaner deals with this, an old problem, in an entirely new and better way. This ingenious device,



Grab's Shoe Cleaner.

weighing less than four pounds, actually cleans the entire shoe in one simple operation. It cleans the sole—the sides—the front—the heel. Mud, dirt, dust, snow is removed in a jiffy.

In the home guarded by one or more Grab's scrapers there is less dirt to contend with, less work to do, less drudgery to suffer, less shoes to buy.

The manufacturers want representatives in all parts of the country to assist them in supplying the wide demand already created. By all means investigate this proposition today by addressing the Security Manufacturing Company, Department 280, Toledo, Ohio, and receive their free catalog, with reports of wonderful money-making results achieved by others.



Cincinnati Manufacturing Company Now Make Metal Doors

The Cincinnati Manufacturing Company of Cincinnati, Ohio, have recently purchased the metal door manufacturing department of the Kinnear and Gager Manufacturing Company of Columbus, Ohio. The purchase includes all of the machinery, equipment and good will. The plant is being moved to Cincinnati where it will be combined with the ornamental iron and bronze business of the Cincinnati Manufacturing Company.

The metal doors are a high class product bearing the Underwriters' label. The company is expecting to extend the business very materially.



Beaver Board is now "Surface Sealed"

A patent granted this year has given the Beaver Board Companies, 568 Beaver Road, Buffalo, N. Y., the right to manufacture wall board which is surface treated in such a manner that the board is not effected by moisture. The sealing and sizing process is applied to both the front and the back surface, a double coating being used on the back side which does not receive the usual paint treatment and is ordinarily unprotected.

The ability of the surface treated Beaver Board to withstand the action of water has been demonstrated by several installations of this material where unusual conditions have existed and accidents occurred. The following is a portion of a letter written by Charles Kynoch and Company of St. Ignace, Michigan, telling of the behavior of Beaver Board used in their Bargain Basement.

"We have been very much pleased indeed with the behavior of the Beaver Board in use in our Bargain Basement. Up to the time of the flooding in no place had the Beaver Board buckled or warped at all, altho in some places on the ceiling and end walls condensation water had been standing on it ever since it was put in. We regard this basement use as a fine test for Beaver Board for humidity changes are very great and wall board which will stand up satisfactorily there will do so almost anywhere."

(Continued to page 154.)

Save Half Your Engine Money and get a Better Engine



ED. H. WITTE

I Offer You 4 WAYS TO BUY A HIGH GRADE WITTE ENGINE (ALL CASH—PART CASH—) (NO CASH DOWN OR BANK DEPOSIT)

Take your choice of Engines and your choice of Terms. Any creditable, worthy person can have all the time he needs. Anyone can try a Witte 90 days to prove Engine quality. Any buyer can rely on my 5-year guarantee.

Regardless of what others ask for Engines, I can build Witte Engines for less because I have the equipment to produce good Engines at low cost. The quality of material used is such that Witte Engines 20, 25 and 30 years old are still being operated. The sizes I make are 2, 3, 4, 6, 8, 12, 16 and 22 H-P.

WITTE ENGINES

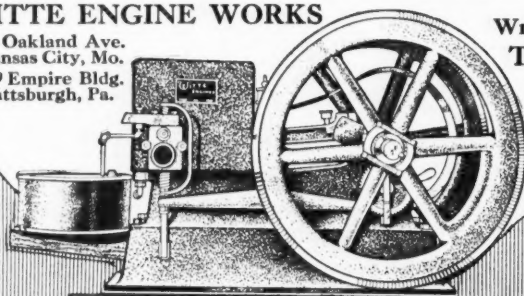
(KEROSENE, GASOLINE, NAPHTHA OR GAS)

Are made in the largest exclusive Engine factory in the world selling its entire output in all sizes direct to the user. The Witte factory has a capacity of 12,000 engines yearly. Every WITTE Engine is shop tested, and proven good. When you buy a WITTE you get a brand new Engine, fresh from the hands of experienced workmen, ready to use. Just put in the water and fuel and it's ready for business. If you are in a hurry, I can ship your engine at once any style or size. Buying direct you save fully one-half over what retail prices would be. Why not pocket this profit? I can save you \$25 to \$100.

Free Book Send me your name and address stating what size engine you may select, and I will send you by return mail a copy of my free book, "How to Judge Engines." It explains in detail the features you should demand in the engine you buy. You do not obligate yourself in any manner by writing.—Ed. H. Witte.

WITTE ENGINE WORKS

1779 Oakland Ave.
Kansas City, Mo.
1779 Empire Bldg.
Pittsburgh, Pa.



EASY TO OWN AND OPERATE

Write for It
TODAY



THE corrugated surface of The Canton Sidewalk Doors prevent slipping and the flush hinges and imbedded handle leave no projections to trip over. These details help to make it the ideal door for you to install this winter.

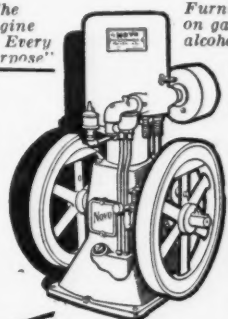
The Canton Sidewalk Door is made in many sizes, is self locking, does not tilt and has a water drain under the cover. The door is well guarded when open.

It pays to buy a good door when you buy and our price is as low as consistent with Canton quality.

Catalog "B-4" of sidewalk doors, coal chutes, gratings and Builders' Iron Work will be mailed you with prices on request.

Canton Foundry & Machine Co.
Canton - - - Ohio

"The Engine for Every Purpose"



Furnished to operate on gasoline, kerosene alcohol or distillate.

Send for Our Book—

"Reliable Power" and read the Novo way of reducing power costs through standardization.

NOVO
REG. U.S. PAT. OFF.
ENGINES and OUTFITS

NO LANK
NO FAN
NO FREEZING
TROUBLE

"Reliable Power" lists Novo outfits—all types of Pumps, Hoisting Outfits, Saw Rigs, Air Compressors, etc. Tell us your requirements and our engineering department will figure on an installation that we will guarantee.

Novo Engine Co. Clarence E. Bement, Sec. and Gen. Mgr. 698 Willow St., Lansing, Mich.

MIXER TOO HEAVY?

Is the mixer you are using or the one you intend to buy too heavy to be easily moved?

A real light weight, powerful compact engine on your outfit will make moving from one job to another much easier.

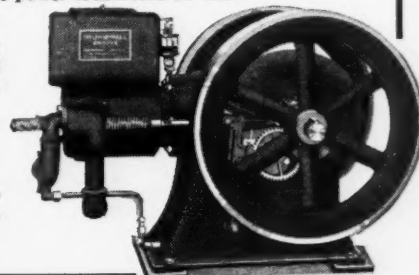
No top heaviness or excess weight to contend with and about 100 pounds per horse power eliminated on the

BROWNWALL

Engine. They furnish sure and constant power economically for any length of time and last for years.

Write for Catalog A
Space 241 Chicago
Cement Show

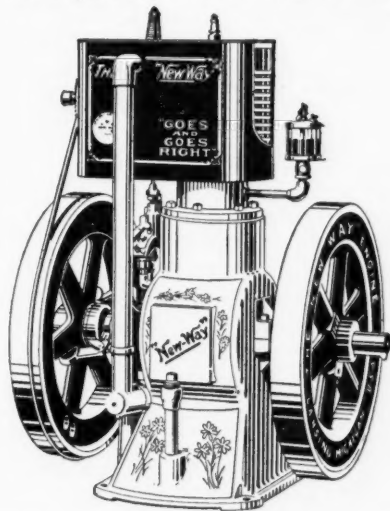
The BROWNWALL
Engine & Pulley Co.
1200-1240 4th St.
Holland, Mich.



THE "New-Way" is a Powerful Engine

Adapted to All Contracting Purposes

POWER—that's one of the first things the contractor wants—the "NEW WAY" is the most powerful engine made for its size and weight. The direct cooling feature eliminates bulky and heavy water or hopper tanks. No leaky or packed joints. No freeze-ups and no overheating. All the power generated is used—there's none lost, for the reason that the cylinders of the "NEW WAY" are ground to perfect size—that means down to a thousandth of an inch. From two to three more piston rings are used in the "NEW WAY" than in ordinary engines. The valves are made of the finest metal and fit perfectly. Such materials and workmanship mean perfect compression—and compression is power.



"New-Way"

"GOES AND GOES RIGHT"

And here are other exclusive "NEW WAY" quality features: High tension magneto; high efficiency carburetor; drop forged steel connecting rods and crank shaft; enclosed, dust-proof, oil-tight crank case and many other engine refinements.

You need never worry about the "NEW WAY" getting out of order. You know what that means in your business. It isn't "cranky" like most gas engines—it's a dependable, reliable, economical machine that "GOES AND GOES RIGHT" before it leaves our shipping room, and, it's Guarantee is for life.

"NEW WAY" Engines built in all sizes and types, for all purposes, from 1 to 12 H. P.
Send for Catalog No. 41

THE "New-Way" MOTOR COMPANY
LANSING, MICHIGAN, U.S.A.
10 OAK STREET



"STAR" FIRE RETARDING VENTILATORS

With Patented Gravity Damper

are acknowledged superior to all others in design, material, workmanship and efficiency.

Storm Proof -- Durable -- Attractive

Provide good ventilation, ample light, and prevent spread of flames upward through the roof.

Made of Galvanized Steel, Galvanized Iron or Sheet Copper.

Evans "Almet" Fire Doors and Shutters, "Merchants Old Method" Roofing Tin, Merchants Metal "Gothic" Shingles

MERCHANT & EVANS COMPANY PHILADELPHIA

New York
Wheeling

Baltimore
Chicago

Atlanta
St. Louis

Cleveland
Kansas City



THE experience of generations has proved that paint composed of pure white-lead like

Dutch Boy White-Lead

is unsurpassed for inside as well as outside use. Its beautifying and durable qualities have made it a standard wherever used.



NATIONAL LEAD COMPANY

New York Cincinnati
Boston Cleveland
Buffalo St. Louis
Chicago San Francisco

(John T. Lewis & Bros.
Co., Philadelphia)

(National Lead & Oil Co.,
Pittsburgh)

Two weeks before the letter was written a fire caused this basement to be flooded and water ran up the side walls and across the ceiling, completely soaking ceilings and walls. Only after this severe treatment was it found necessary to remove any of the Beaver Board.

Another severe test is recorded in a letter written by the Commercial Sash and Door Company of Pittsburgh, Pennsylvania, telling what happened to the Beaver Board which they delivered to M. S. Moorehead at McDonald, Pennsylvania. This letter, in part, follows:

"In constructing the building a water pipe was placed between the studding running from the first to the second floor. The studding was covered with Beaver Board on both sides. Just recently this water pipe burst and allowed the water to fill up between the Beaver Board and the studding to a height of about four feet. This happened about 6 o'clock in the evening, just after the store had been closed, and the leak was not discovered until late the next morning. Mr. Moorehead punctured the Beaver Board and drained out the water.

"The Beaver Board in no way was damaged and from outward appearance you could not tell that anything unusual had happened. Please remember that there was no sheeting to protect the Beaver Board; it was nailed to the studding."

These are severe tests not called for in ordinary service, but they indicate the extent to which the "surface sealed" Beaver Board may be trusted in resisting the destroying action of water. They indicate the high "factor of safety" which is adhered to in the construction of this wall board.

Sidney Tool Company Building an Extension to Factory

A two-story brick building 60 feet by 100 feet is now under construction at Sidney, Ohio, on the property of the Sidney Tool Company. The entire floor space of this addition is to be used as an erecting shop for the company's tool department.

Floor and Desk Sanders

Wayvell Chappell and Company, 358 W. Madison Street, Chicago, Illinois, are sending out circulars descriptive of two new machines which they have placed on the market.

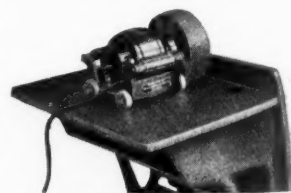
One of these machines is an improved type of their Automatic Ball Bearing Electric Floor Surfacing Machine. The most important improvement which has been incorporated in this machine is the mounting of the sanding roller so that one end extends beyond the side of the machine. This makes it possible to finish the floor right up to the baseboard. The elimination of border work is an important item both from the standpoint of labor and finish.

The sanding roller on the improved machine may be changed from one side of the machine to the other, so that the wall may be easily reached in all parts of the room.

This machine is made for three size rollers. The No. 9 surfacing roller is 9 inches long by 8 inches in diameter; the No. 12 roller is 12 inches long by 8 inches in diameter and the No. 15 roller is 15 inches long by 8 inches in diameter.

The second machine which the company is bringing out is an Automatic Electric Surfacing Machine for removing varnish from desk tops, counters, tables and for dressing up new work. A coarse sand paper is used first to take the old varnish off of the wood and this is followed by a sanding with fine paper to secure a smooth finish.

Wayvell Chappell and Company have been manufacturing surfacing machines for many years and their products are



A Tedious Process Eliminated with Wayvell Chappell Surfacer.

(Continued to page 156.)



Contractor Agents Make Big Money!

Every country home, church, school and store, old as well as new, needs a JENNE Lighting Plant. Oil lamps, with their soot and smoke and smell, their trouble, inconvenience and danger, no longer satisfy intelligent people. Lighting plants installed inside the house are always dangerous and seldom efficient. This is why our contractor agents are coining money selling the



Installed outside the house in the ground with pipe connections to every room, this system is absolutely safe. Its construction of steel and reinforced concrete (patented) appeals to everyone, for it makes the plant practically everlasting. The careful design, liberal dimensions, and the simplicity of the JENNE make it most economical and dependable.

It is easy to install. It is guaranteed for 15 years.

The modern JENNE System has NONE of the trouble, inconvenience and danger of other lighting systems, be they acetylene, electric, gasoline or kerosene, and it has all their advantages. There are no "come backs" when you install a JENNE. Thousands in use and every JENNE user is a booster.

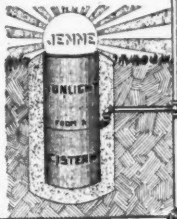
Passed by the National Board of Fire Underwriters.

Will you act as our salesman? We sell a complete, guaranteed lighting system; we carry the account; we offer terms that will suit your customers; we pay you a liberal commission.

Write for our Contractor Agent Proposition at once

The Jenne Acetylene Gas Machine Co.

313 TRACTION TERMINAL BLDG., INDIANAPOLIS, INDIANA



Carpenters

Make \$50 a week in spare time.

Get the exclusive agency for Akron Lighting Systems, portable and street lamps and lanterns.

Write Today

AKRON Independent Lighting Systems

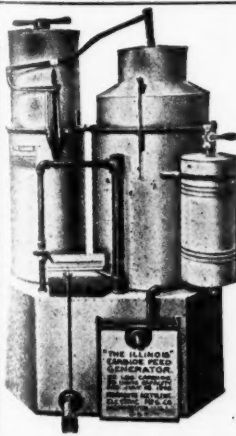
Supply gasoline under pressure through hollow wire to lamps all over the house, and to gasoline stove. Our system is absolutely safe.

Sheds a soft, steady, brilliant, white light of high candle power. Makes the home attractive and reading a greater pleasure. Better and cheaper than any other illumination.

Complete line of "Akron" portable and street lamps and lanterns. Latest types; latest improvements; safe and simple construction; 15 years of success.

Agents Wanted

in unoccupied territory. Handy demonstration outfit. Our proposition to live hustlers cannot be beat. Write for catalog and terms. Akron Gas Lamp Co., 833 So. High St., Akron, O.



Lighting Systems that are Safe, Simple, Reliable and Efficient

Illinois and Monmouth Pit Generators

represent the pinnacle of Perfection in Lighting Systems. Their convenience and fine lighting facilities are appreciated by every rural resident. They are very easy to sell and yield you a handsome profit. We give Carpenters and Builders special Prices and Discounts and help them close sales by sending all prospects, handsome booklets and literature showing the desirability of our Generators.

Simply send us the names of persons who might be interested; we'll work together and you act as our direct agent installing and selling them. In the meantime learn more about Illinois and Monmouth Generators by reading over our Catalogue and Proposition—Write

Monmouth Acetylene-Electric Manufacturing Co.
Dept. AB. MONMOUTH, ILL.

Bit Brace No. 6010



When You Buy a Brace

THE name "Goodell-Pratt" on any tool is an assurance of quality. The fact that we manufacture a great many precision tools is your guarantee that the raw material, workmanship and accuracy of our products in general are of the highest. This Ratchet Bit Brace is one of over 1500 Good Tools described in

Our Free Catalog—Write For It

This Brace has a forged steel sweep and jaws. The steel-clad cocobolo heads run on ball bearings which are enclosed in a dust-proof compartment. The side handle runs in adjustable collars. The chuck will hold all square shank bits. The ratchet is worked by a ring shift. All exposed metal parts are highly polished and nickel plated. But get our catalog—it is a complete guide to good tool buying.

GOODELL-PRATT COMPANY

Greenfield, Mass.

Toolsmiths

U. S. A.

GOODELL PRATT
1500 GOOD TOOLS

WINTER PROFIT!

Are You Getting Your Share?

A Contractor Says:

"I made \$500.00 last year out of this business."

You can do as well. Sell DAVIS light plants for country homes. Used all over the world for fifteen years. We help you sell.

No Investment Asked The proposition does not ask you to risk your money on our goods. It is our business to help you sell and we do. Ask for full description of plan.

DAVIS ACETYLENE COMPANY

90 PROSPECT STREET - ELKHART, IND.



This Marvelous Lighting System is perfectly simple to install; surprisingly inexpensive to maintain, and will flood your home with a perfect Clear and Brilliant Light at a nominal cost.

THE TURES LAMPS and LIGHTING SYSTEMS are without a question the simplest, most complete and efficient on the market. ALWAYS READY and DEPENDABLE—no more smoke, trouble and worry of the uncertain kerosene lamp—make and burn its own gas out of common gasoline, developing from 400 to 1200 candle power per lamp.

AGENTS wanted—everywhere. For prices, territory, etc., write to

THE TURES MFG. CO.
386 Sixth Street Milwaukee, Wisconsin

well known to contractors and builders. When new floors are finished or old ones resurfaced with Wayvell Chappell machines the high quality of the work is assured.

These machines are sold on a liberal trial offer which makes it unnecessary for the buyer to take any chance in purchasing his surfacing machine. Circulars may be had of this company for the asking.



"Bruston" Automatic Electric System

When a "Bruston" Automatic Electric System is installed it is simply necessary to turn on the switch in order to obtain light or power—day or night. This system gives the farm or small town every convenience in electric power that is furnished by a city power plant, within the capacity limits of the automatic system. The advantages of the electric system in general are well known. The principal advantages of the automatic electric system are that power is available at any time and that very little attention is required to keep the system in operation. The lighting system loses a great deal of its value if it must be supplemented during a portion of the day by some other source of light. On a dark day light is often needed and when the electric system is installed it is a great convenience to use such equipment as electric irons, toasters, stoves, vacuum cleaners, fans, sewing machines and small motors, nearly all of which are used during the day-time. Not only is power always available with the automatic system, but the expense of keeping an attendant having expert electrical training is eliminated. This feature is particularly important in small town plants in that it reduces materially the power rate which must be established in order to meet the operating expense and pay the owner of the system a reasonable profit.

Other advantages applying to the "Bruston" system are

that only a small storage battery is required which is charged automatically whenever required; the system is easy to install, being sent out complete and self-contained; it may be moved to any location easily; it will operate on natural or town gas, and it is lubricated by an oil pump which takes the lubricant from a tank that requires filling only occasionally.

The "Bruston" system was originated in England, where it has been giving satisfaction for a number of years. It was introduced in America only recently, but quite a number of installations have been made.

The American company wishes to interest contractors and builders in the sale and installation of the system and they are making a special offer for this purpose. Readers may obtain full particulars by writing The Bruston Automatic Electric Lighting and Power Company, Inc., 101 Park Avenue, New York City.



Fourteen Improvements Distinguish 1917 Model Bush Car

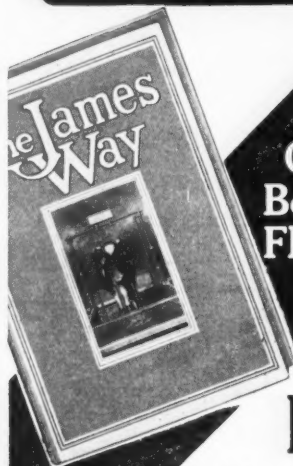
Greater comfort, greater power, more convenient, full stream-line body, One-man top, longer wheel-base, are some of the new features in the Bush. It is one of the trimmest, most complete cars selling at a low price.

The demand for this attractive car has made necessary a far bigger output for the new year. Increased output means decreased manufacturing cost and for this reason it is possible, says Mr. J. A. Bush, President of the Bush Motor Co., to hold the prices at the same low figure in spite of the many important improvements.

The company has been so successful in closing contracts for materials that prompt deliveries are promised even on quantity orders. Agents will be fully protected, no matter how big the demand increases. Complete details can be had by writing Mr. J. H. Bush, Bush Temple, Chicago, Ill.

BARN PLAN SUGGESTIONS

That Help Decide Important Questions



Read How
You Can
Get This
Book
FREE

Here is your authority on barn building and it's Free to carpenters and contractors. Couple your building skill with the knowledge of our barn experts and you will double your profits through increased business.

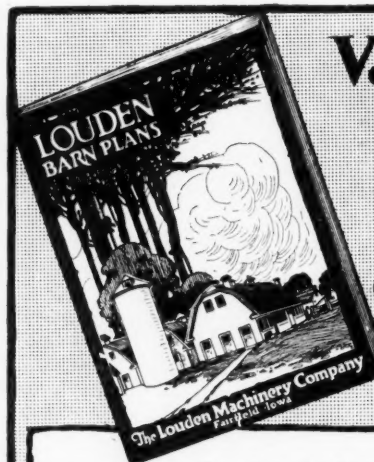
JAMES'S Barn Plan Service

is being used by thousands of barn builders. This advice regarding dairy barn construction and equipment is based on years of research, study and work. Endorsed by America's biggest dairy men. You can get this book free by sending us the names of men who expect to build dairy barns. Write today.

James Mfg. Co.

D. O. 75 Cane St., Ft. Atkinson, Wis.

Elmira, N. Y.



Valuable FREE BOOK for Carpenters and Builders

Go after the barn building business in your neighborhood.

Show your farmer customer how he can have a modern barn at moderate cost.

Save time and trouble in planning barns for cows, horses, combination barns, hog houses, etc.

"LOUDEN BARN PLANS" A Book of Building Facts

Not a Catalog. Contains 51 representative designs with full description and estimated cost; 194 drawings, plans and photographs. Tells about grading, drainage, concrete work, strength of materials, framing, lighting, ventilating, etc.

The book is absolutely free and will prove helpful to you. Write for it today. No obligation.

THE LOUDEN MACHINERY CO.

5508 Court St.

Fairfield, Iowa

FRESH AIR AND PROTECTION!



The Ives Window Ventilating Lock

A Safeguard for Ventilating Rooms, allowing windows to be left open at the top, the bottom, or both top and bottom, with entire security against intrusion.

Descriptive circular mailed on application.

THE H. B. IVES CO.

SOLE MANUFACTURERS

NEW HAVEN

CONNECTICUT



Try These Mixers Before You Buy

Don't take chances. Buy one of our famous Boss Mixers on trial—test it—ship it back if it doesn't "make good."

Lightest, strongest, fastest mixers made—make money for you anywhere. All Popular Types and Sizes. Pavers—Light - Weight, All - Purpose Mixers—Low Chargers—Special Highway Mixers, with high wheels for rough roads. 5, 7, 8, 10, 15-ft. sizes on skids or wheels. Thousands in use. Write for catalog and special trial offer.

American Cement Machine Co. (Inc.), 1006 Johnson St., Keokuk, Iowa





The MAN who Specifies it

"Haven't had a complaint. DEVOE always gives my clients satisfaction. No doubt about DEVOE purity—the guaranteed formula appears on every can"

(signed) Every Architect

DEVOE

The oldest manufacturing concern in the United States
Founded in New York in 1754
F.W. DEVOE & C.T. RAYNOLDS NEW YORK
DEVOE & RAYNOLDS CO. CHICAGO





THIS IS THE HAMMER WITH THE PEDIGREE

OF COURSE IT'S A

GERMANTOWN MASTER BUILDER

Expert workmen the country round know and use this hammer. The finest possible quality in material, design and workmanship. Octagon shaped handle of second growth hickory, ideal hardness, and a claw that will grip all size nails with a grip that holds. Positively the **only** hammer for the workman who wants the BEST. Three sizes, Nos. 745, 11 oz., 746, 16 oz., 747, 20 oz., at \$1.00 each.

Price \$1.00

Germantown Tool Works

PHILADELPHIA, PA.

Branch: 62 East Lake Street, Chicago

Uncle Si's Saw



At your dealer's, or sent prepaid for \$2.50

Simonds Saws

Uncle Si Says: "You can't own a Simonds and be dissatisfied. I've used this saw for over twenty years. It has the right 'hang' and the right 'feel' and goes through a board fast and true and the teeth stay sharp the longest of any I've ever seen. Take it altogether you can't buy a better saw and you don't want a cheaper one."



Our "Carpenter's Guide-Book" will be sent free to you upon receipt of your address. 26-inch Hand Saw \$2.50 delivered.

Simonds Mfg. Co.

Established 1832

Fitchburg, Mass.

Bay State "Agatex"

Makes Better Cement Floors

Rough cement floors have a tendency to be damp, to dust and to wear away unevenly. Dampness and dust are detrimental to health and comfort and to the room's contents. These drawbacks are easily overcome by using Bay State "Agatex."

This is a cement floor filler which is wearproof, dustproof, oilproof and waterproof. Easy to apply and economical.

One gallon will coat 400 to 450 square feet on floors of ordinary texture and condition. Bay State "Agatex" is extremely long wearing.

Write for circular 30 giving detailed information about Bay State Agatex.

WADSWORTH, HOWLAND & CO., Inc.
Boston, Mass.
New York Office: Architects' Building



ARTISTIC HOMES

A book of 280 (8 x 11 inch) pages showing perspective views and floor plans of 250 artistic modern homes. A large variety of designs are given so as to meet the taste of the majority of home builders. There are artistic houses for people of moderate means and others for the more wealthy, but in every case the design is made with reference to comfort and economy.

Every design shown has been made by best architects in the world, who have made a study of home architecture and that alone.

Price \$1.00 Postpaid

American Carpenter and Builder

1827 to 1833 Prairie Avenue, Chicago, Ill.

A Light Weight Engine For Contractors

About seven years ago the Brownwall Engine was designed and built after a careful study of the requirements necessary to produce an extreme light weight, compact, powerful and lasting engine, especially adapted to contractors' work.

About 100 pounds per horsepower of excess weight was eliminated over former designs, stronger metals of less weight being used instead of bulky cast iron. High speed is also an important factor in lightening the engine as it was found that with the same bore and stroke, at a high speed, more power could be produced, consequently the heavy fly-wheel could be reduced in size considerably without diminishing the power.

For all around steady work day in and day out the Brownwall Engine, 1 1/4, 3, 4, 6, 10 horse power, is called to your attention.

The Brownwall Engine and Pulley Co. of Holland, Mich., will be glad to send catalog and prices upon request.



Safeguarding Contractors Interest in the Wall Board Trade

The practical and economical uses of wall board are growing steadily. Wall board is no longer held merely as something with which to finish off an occasional room in the attic or cellar. Its economical and utilitarian advantages, to say nothing of its artistic effectiveness, have recommended its use thruout the modern residence. Factories use it for setting off or finishing offices. Stores use it for backing for window displays. It is used for partitions, closets, booths, wainscoting and numerous other practical purposes.

This means that the field has been constantly enlarging for this product.

Increasing demand, increasing cost of high-grade materials and also keen competition among the manufacturers have resulted in wall board of all degrees of quality being marketed. The harm is not, however, in this so much as that inferior boards are sometimes sold under the claim of high quality.

This situation has called for discrimination in purchasing on the part of the dealer in order to safeguard his customers.

Plastergon dealers, we are informed, select Plastergon wall board because from the very first day it was manufactured its high quality has been zealously maintained. Dealers know that they can depend upon it, as being uniform in quality and to be made of the high class treated wood fibre. Many dealers have voluntarily given their unqualified endorsement of Plastergon wall board. It is the *safe board*. The manufacturers assume that it can be recommended and used by contractors and dealers with the full assurance of the best results.

For full particulars address Plastergon Wall Board Company, Dept. A., 1 Philadelphia Ave., Buffalo, N. Y.



Standard Scale Moves Philadelphia Office

The Standard Scale & Supply Co. have moved their Philadelphia office, warerooms and service department from No. 35 S. Fourth Street, to new location at No. 523 Arch Street. The building having a depth of nearly 300 feet extending thru to No. 518 Cherry Street.

These larger quarters are necessary to take care of the various departments and stock of Concrete Mixers, Hoisting Outfits, Power Pumps, Gasoline and Oil Engines, Scales and Trucks, as well as Repair Parts for Engines, Hoists, Mixers, etc., which are carried at all branches of this company in connection with a special service department operated to give the advantage of quick service and repairs in case of adjustments or breakdowns.